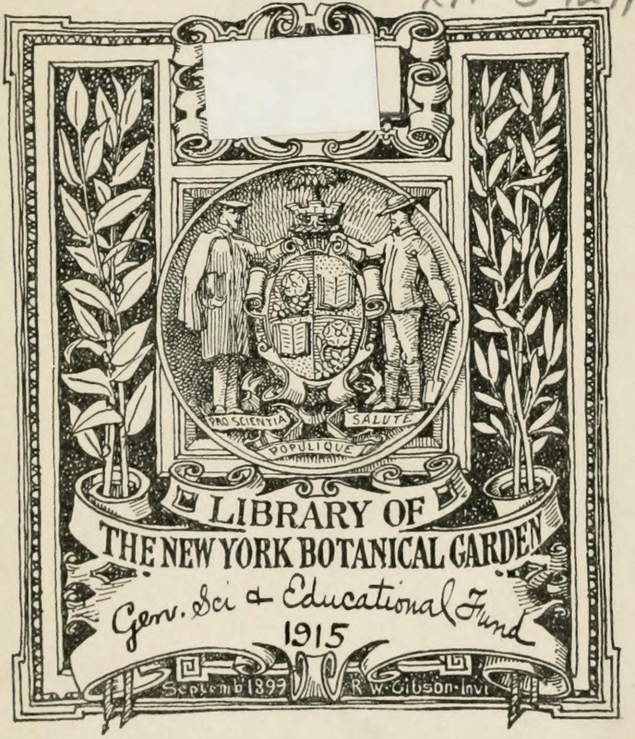
XA G7241



LIBRARY OF
THE NEW YORK BOTANICAL GARDEN
Gen. Sci & Educational Fund
1915

FIRST ANNUAL REPORT

OF THE

SECRETARY

OF THE

MAINE BOARD OF AGRICULTURE,

1856.

LIBRARY
NEW YORK
BOTANICAL
GARDEN

Augusta:
FULLER & FULLER, PRINTERS TO THE STATE.
1857.

XA
.G7241
1856

INDEX.

PAGE.

- Agriculture, application of science to, 39
  - as a business, 33
  - Conservative influence of, 12
  - Dependence of other interests on, 9
  - Importance of, 7
  - Improvements in, 46
  - Present condition, in Maine, 48
  - Legislation relative to, 16
  - Wants of, 32
- Agricultural Societies useful and necessary, 29
    - when organized, 17
    - power and duties of, 24
  - Implements, 68
    - Statements on, 70–75
- Analysis of soils, 40
- Apples, list of best varieties, 163
  - for Stock, 161
- Ayrshire Cattle, 134–144
- Bounties to encourage production, 30
- Breadstuffs, supply of, 56
- Carrots, value of, 104
- Cherries, list of best sorts, 163
- Circular, copy of, 48
- Cranberries, 167
- Dairy Cows, Points of, 149
- Devons, North, 133
  - Scale of Points for, 138
- Draining, soils improved by, 82–95
  - a security against drought, 85
  - Tile, 87
  - Report of Bangor Horticultural Society on, 89
  - Letter of B. F. Nourse on, 94
- Diffusion of knowledge among Farmers, 31–169
- Durham, or Improved Short Horn Cattle, 133
  - Scale of Points for, 135
- Emigration, 171
- Farmers' Clubs, 29
- Farm accounts necessary, 36
- Forests, influence of, on climate, 76
- Frost, action of, on drained land, 84–97
- Fruit culture, 159
- Fruit trees of western growth, 160
- Geological survey, 30

PAGE.
Grapes, list of choice, 163
Guano, 98–118
Gypsum, or plaster, 118–123
Hay crop, value of, 52
Hereford Cattle, 134
    Scale of Points for, 141
Horticulture, connection of, with Agriculture, 23
    of earlier date than Agriculture, 39
Indian Corn, 63
Implements of Husbandry, 68
Jersey Cattle, 134
    Scale of Points for, 147
Lumbering an obstacle to Agriculture, 168
Land, Wood, 76
    Swamp, 77
Manures, 109
    Statements on, 119
    Waste of, 114–116
    Marine, 111
Milch Cows, number of, in Maine, 130
Muck or Peat, value of, 113–117
Method of husbandry in Maine, 53
Pears, list of best varieties, 163
Pork, profit of growing, 151–158
Potato, introduction of, 23
Plaster or Gypsum, 118–123
Plums, list of choice sorts, 163
Profit of fruit culture, 161
Report of Bangor Horticultural Society on Drainage, 89
Root crops, 100
    Statements on, 107
Ruta-Bagas, 104
Sea weed as manure, 112–120
Science applied to Agriculture, 38
Soil of Maine, adaptation of, to farming purposes, 50
Sheep, 151
Shelter, influence of, 77
Stock, 129
    Requisites to success in raising, 130
    Necessity of a standard in judging of, 134
    Various breeds, 132
    Scale of Points for, 136–149
    Statements on, 151
Swine, 150
Swamp lands, 77
Tile for draining, 87–100
Tillage land, 75
Turnips, 102–106
Under draining, 81
Wood lands, 76
Wheat, 56
    Statements on, 59–62

FIRST ANNUAL REPORT

OF THE

SECRETARY

OF THE

MAINE BOARD OF AGRICULTURE,

1856.

BOARD OF AGRICULTURE—1856.

SOCIETY.	NAME.	P. O. ADDRESS.
York,	S. L. Goodale,	Saco.
West Oxford,	James Walker,	Fryeburg.
Oxford,	Darius Forbes,	South Paris.
Cumberland,	John Sawyer,	Raymond.
Lincoln,	Thomas Simmons,	Waldoborough.
Androscoggin,	Robert Martin,	West Danville.
Sagadahoc,	Charles J. Gilman,	Brunswick.
Kennebec,	Horace Parlin,	East Winthrop.
North Kennebec,	Warren Percival,	South Vassalborough.
South Kennebec,	George Williamson,	Pittston.
Franklin,	Lorin Adams,	East Wilton.
West Somerset,	Rufus Bixby,	Norridgewock.
East Somerset,	Eleazer Crocker,	St. Albans.
Piscataquis,	Calvin Chamberlain,	Foxcroft.
Waldo,	Horace McKenney,	Monroe.
Penobscot,	E. F. Crane,	Kenduskeag.
North Penobscot,	William R. Hersey,	Lincoln Center.
Aroostook,	J. W. Haines,	Maple Grove.
Washington,	William D. Dana,	Perry.
Bangor Horticultural,	J. Wingate Carr,	Bangor.
Maine Pomological and Horticultural,	D. A. Fairbanks,	Augusta.
West Penobscot,	Matthew H. French,	East Corinth.
Penobscot and Aroostook Union,	Samuel Darling,	Patten.

S. L. Goodale, *Secretary.*

An Act to establish a Board of Agriculture.

Be it enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECTION. 1. A State Board of Agriculture is hereby established, to consist of one member from each county in the state, and the governor and secretary of state shall be members ex officio. Said members shall hold their offices for the term of one year, and shall be elected by ballot, as follows: Where there is but one agricultural society, the member shall be elected annually: where there is more than one, the oldest incorporated society shall elect the first year, and the others in successive years by rotation, according to the dates of their respective incorporations. No member or officer of the legislature shall be a member of the Board of Agriculture, and in all cases the members shall be elected at the annual meetings or fairs of such societies, or at any regular meetings thereof called for such purpose, and they shall receive a certificate of their election, signed by the president and secretary of such society; and in case of any vacancy occurring in the representation of any society at this board, it may be filled by an appointment by the president and secretary of such society.

SECT. 2. And the first meeting of said board, shall be held at the state house in Augusta, on the third Wednesday of January next.

SECT. 3. At the first meeting of the Board of Agriculture, and at each annual meeting on the third Wednesday of January thereafter, the board shall organize by the choice of a president and such other officers as may be deemed necessary.

SECT. 4. It shall be the duty of this board to investigate all such subjects relating to agriculture, horticulture and the arts connected therewith in this state, as they may think proper; and it is hereby empowered to take, hold in trust, and exercise control over, any donations or bequests that may be made to it for promoting agricultural education, or the general interests of husbandry.

SECT. 5. The Board of Agriculture shall meet at the state house, in Augusta, once a year; and they are hereby empowered annually to elect a suitable person to act as secretary of the board, and to prescribe

MAR 1 1915

and determine his duties; and in case of vacancy by death or otherwise, the governor with the advice of his council, is hereby empowered to fill the same. And all reports and returns required by law to be made by said societies, shall be made and returned to the secretary of this board. The governor and council shall determine his compensation, which shall not exceed eight hundred dollars per annum; and the compensation of the members of the Board of Agriculture shall be the same as the members of the legislature, for a term not exceeding ten days. And the said board shall, annually, on or before the second Wednesday of January, by its secretary, submit to the legislature a detailed report of its doings, together with a digest of the returns of the several agricultural and horticultural societies, and of such statistics as he may be able to collect, with such recommendations and suggestions as the interests of agriculture may be deemed to require, and cause not more than three thousand copies thereof to be printed by the printer of the state, five hundred thereof being for the use of the legislature, and the remainder for distribution, under the direction of the board, among the farmers of the state.

Sect. 6. The governor shall draw his warrant on the treasurer, from time to time, for such sums of money as may be necessary to defray the salaries and expenses provided for by this act, an account thereof having been first rendered by the secretary of the board, and audited by the executive council; and a sum not exceeding one thousand five hundred dollars annually is hereby appropriated to meet such expenses.

Sect. 7. The present executive committee of the state agricultural society, shall constitute the Board of Agriculture for the current year.

Sect. 8. All acts and parts of acts inconsistent with this act are hereby repealed.

[Approved April 1, 1856.]

REPORT.

To the Senate and House of Representatives:

In this first report, it seems proper that those topics should be introduced, which lie at the foundation of agricultural improvement, and particularly such as have a special relation to Maine. I propose, therefore, to speak of the importance of agriculture to the Commonwealth, briefly to sketch the history of associated action and of legislation in this State in its behalf, to consider some of its wants and its present condition and prospects, with suggestions relative to its improvement. These topics embrace a wide field of inquiry, and on each a volume might be written. A thorough discussion, therefore, will not be expected, but rather such remarks and suggestions as may serve to invite attention, and open the way for more elaborate discussion hereafter.

Importance of Agriculture.

There are some truths universally recognized and admitted without hesitation or limitation while yet their real magnitude and importance are seldom fully appreciated. Like visitors for the first time to the cataract of Niagara, we may even stand before them, face to face, and yet be unconscious of the reality; it being only by continuous and protracted effort that the mind at length comes in a good degree to grasp their real magnitude, and it is for this reason alone that it is deemed necessary here to dwell upon the importance of agriculture. All are ready to admit that it is a most important branch of industry, but very few realize the extent of its bearings and influences on all interests, material, intellectual and moral, individual and national.

It has been well said that "the culture of the soil lies at the bottom of all culture, moral, mental and physical." And it is a truth familiar to us all that where the treasures of the soil lie neglected and unexplored, there we find the savage "whose untutored mind" is as barren and neglected as the forest through which he roams. On the other hand, we find that in those countries where civilization and refinement have most progressed, agriculture is fostered and cherished as a most agreeable pastime and pursuit, as well as the most direct and certain means of national advancement and prosperity; for on the success of this art, the welfare of commercial, monetary, manufacturing, and all other material interests, mainly depend.

Look at Great Britain, and see what progress she has made in all that elevates, ennobles and blesses a nation, notwithstanding the hindrances of her social and political organization. It is her honorable boast, that however great her commerce, gathering, as it does, treasures from all parts of the globe, and however marvelous and gigantic her manufactures, of which specimens may be found in all countries, even to the interior of Africa, her agriculture is the support and foundation of the whole, and her progress has been accelerated in proportion to its improvement. It matters little whether the advance be a cause, or a consequence of agricultural progress, the fact being established that they go hand in hand, which is ample proof of intimate and necessary connection. And such has been the uniform testimony of all ages.

Greece and Rome, in the days when their senators and generals came from the plow to the halls of legislation and the field of battle, were powerful and prosperous. Then it was that they enjoyed the highest civilization and refinement, and that those monuments of literature, the study and admiration of all subsequent ages, were erected. But when agriculture came to be neglected and despised by their citizens and handed over with other industrial pursuits to the slaves, they steadily dwindled away. But we need not look abroad for evidence in this matter; the history of our own country bears ample testimony. What is it but agricultural enterprise, carried out with the indomitable energy and perseverance characteristic of our people, which has elevated the United States to their present position among the nations of the earth with a rapidity and steadiness of progress unparalleled in history? And it is believed that a careful comparison of different sections in our own country will, to say the least, prove exceedingly suggestive on this point. To what is the more rapid development of the free states, in all which constitutes greatness, and which has given us a name among the nations of the earth, to be ascribed? How is it that with generous soil and genial climate, the older slave states are steadily tending to exhaustion and barrenness, while the North, with fewer natural advantages, still succeeds in extorting from reluctant soil, and in spite of chilling blasts, such abundant harvests as to effect this great and constant growth in wealth and power? The answer is obvious, and indisputable—agriculture is here the chosen occupation of the educated citizen, and not as there, of the unwilling slave. The sweat of the brow is bestowed alike by both; but here is added earnest and careful thought, and consequent skill. The labor is intelligent labor; and *hence* the more rapid improvement in material wealth and power, and of refinement and civilization among the masses.

But to be more specific, we will examine a few of the points wherein the importance of agriculture is especially manifest; and first, it is important as being the foundation upon which are based all industrial arts and the entire business of the world. Whence comes the food to sustain the toiling millions in every calling, as well as the drone and the profligate? Obviously, as the result of agricultural pursuits alone. And not only does it sustain existence, but upon it depends the prosperity of every other branch of business, from the humblest day laborer to the princely merchant whose ships visit the ends of the earth. If agriculture be successful, every other branch of business prospers; but if it meet with disaster, all others are depressed. A few years since, the failure of a single crop, and that a comparatively unimportant one, in a portion of the kingdom of Great Britain, produced a general derangement of the business of the entire nation in its varied ramifications, and was seriously felt abroad in the disturbance of the exchanges of other nations.

The business history of our own country goes to establish the same fact. Every one acquainted with it knows that there have been several commercial crises during the present century; but not all are aware that each and every one has been preceded by short crops. These commercial disasters have been by some, attributed to the varying financial policy of government destroying confidence and preventing business from settling into fixed and productive channels. Doubtless this has had an influence, but it is quite inadequate to the effects produced. The cause lies deeper, even in the very sources of business, which appears from the fact that such serious disasters do not uniformly result from a change in governmental policy, and also that when they have occurred, business has recovered from its embarrassments under what have been considered most unfavorable circumstances, so far as this policy is concerned, just as soon as abundant harvests ensued. Nor is it true that these crises have occurred only on occasions when the commercial and monetary policy of the government was unsettled, or when what was deemed an unfavorable policy was adopted. But how is it in relation to failures of agricultural products? Not an instance can be pointed out where these have fallen much below the general average, which has not been followed by commercial embarrassment. This is so well understood by intelligent merchants that it has come to be a maxim with them, that short crops and high rates of exchange will at any time produce a panic, and high rates of exchange necessarily follow short crops, for the simple reason that we have then a deficiency of exports with which to cancel indebtedness for imports, and the balance must be met by a drain upon the specie of the country. Every one of the commercial crises which have occurred during the present century have been preceded by short crops—crops very considerably below the average. They were not all equally disastrous, owing, in part, to difference in the amount of failure, and in part to collateral circumstances affecting them. Thus the last was greatly mitigated by the influx of California gold, and but for which it would probably have been vastly more disastrous than any previously experienced. A very little reflection will enable any one to understand why, and how it is so. There are 1,449,075 farms and plantations in the United States. Now suppose the failure of crops, including hay, grains, roots, cotton, sugar, and all else, to be equivalent to twenty bushels of wheat each, or a cash value of thirty dollars, (which is much less than has uniformly been the case when serious embarrassment followed,) and we have an aggregate of 43,472,250 dollars—it is just so much taken out of the surplus, and of course out of what would go to make up the business of the country. Every man, if honest, will purchase only what he has the means to pay for. The farmers buy what the surplus products of their farms enable them to do;—if their net income falls below the general average, their trade will be diminished to such amount. This affects, first, the retailer, and not only lessens his sales, but makes difficult, if not impossible, collections for what he has sold on credit. If he has laid in his usual stock of goods, depending on sales and collections to pay for them, he not only fails here, but loses interest and suffers from depreciation in the value of his goods, and unless he have a sufficiency of other and available capital, must obtain an extension of credit, or fail. This cripples his creditors, and they in turn must get relief, or fail, and so on. If all are short, the crash must come, and this uniformly is first perceived in the great centres of business. When it comes, the demand upon those in the rural districts to pay up their indebtedness becomes imperative, and it can only be responded to by ruinous sacrifices; and thus the whole country is involved in distress, if not in bankruptcy.

Beginning at the farm, by a failure small in amount to each individually but great in the aggregate, the loss reaches in its effects, every industrial occupation, every branch of trade, and every class and individual in society. Hence, too, the success of agriculture is of equally extensive benefit, for it manifestly underlies, and sustains, and is the firm and unflinching support of all.

No one professes to believe that agriculture is *alone* necessary to the prosperity and greatness of a nation, it being perfectly obvious that the farmer needs a market for his surplus products, wherewith to procure the conveniencies and luxuries which the farm does not produce; and the nearer the market, the better, so that true policy dictates that all branches of industry should go on hand in hand, in as near juxtaposition as circumstances will allow, and trade and commerce effect the needful exchanges. What is claimed, is, that each should be esteemed and cherished in proportion to its true position in the scale of importance, and, as without agriculture, all others must cease at once, its pre-eminence is beyond dispute.

There is another aspect of this subject which deserves more than the passing allusion to it now given, which is the influence of agriculture upon the health of the nation, physical, moral and political. The occupation of the farmer is better, than all others, calculated to develop a high degree of bodily strength and vigor. Active exercise in the pure open air at all seasons, and such an abundance of it as is indispensable in the pursuit of agriculture, is of itself the best possible means of securing a well developed frame, solid muscles, firm nerves, and all that goes to make up health of body, as well as the surest guarantee of its continuance to a good old age. Its regular and natural habits of early rising and retiring, and of living generally, together with the absence of harrowing care and continued excitement, and feelings of dependence *only* upon the Giver of all good, bring it into strong contrast with life in densely populated cities, as usually seen. It has been sometimes said by those thus living, that they would die out entirely in a few generations were it not for the unceasing current of healthy blood being infused into it from the country. However this may be, no doubt can exist as to the general comparative degree of health, in town and country. The anxiety of those in town to escape often enough and long enough to recruit their jaded energies, is sufficient testimony, if other was wanting.

Of not less consequence than physical, is the moral and political health, and here the contrast between town and country is equally favorable to the latter. Agriculture is pre-eminently the great conservative influence of the land. Patiently toiling in their vocation, developing the resources of the country, the tillers of the soil are eminently lovers of law and order, virtuous and patriotic. Not only do they sustain existence and produce wealth, but they are the reliance of the nation in times of danger, and to a great degree the conservators of public morals. The restraints of law are less needed for them, than for others. Nobody ever dreamed of looking among agriculturists for the rise and progress of public corruption, or for combinations for wicked and treasonable ends; and yet it is they who hold the sinews, both of war and peace, and are the arbiters of our destiny; while so abundant and ready for action are the elements of social discord and political revolution, and so comparatively plentiful are vice and crime in their varied forms in our cities, as almost, if not quite to warrant the saying of a distinguished man, that "large cities are ulcers on the body politic." In a country too like ours, where the cultivators of the soil are also its owners, they form a sound, safe, and conservative middle class, which holds in check both the rapacity, and despotic tendency, of the unprincipled wealthy and talented on the one hand, and the lawless violence and unbridled passions of the viciously poor and ignorant, on the other.

"God made the country, man made the town," and the difference is what might be expected from the diverse characters of the makers. Experience shows that it is to the country that the nation must ever look, not only for the elements of material power and greatness, but for law, order and right,—for protection from civil discord,—for resistance to tyranny and injustice, to wrong in any shape, or from any source.

Sketch of associated effort and of legislation in Maine relative to agriculture.

The story of associated effort and of legislative action, for the promotion of agriculture in Maine, though brief, is interesting and valuable, as furnishing instruction which may serve to guide and guard in future effort,—failure not less than success having its lessons.

It is now nearly seventy years since associated effort for agricultural improvement commenced in this state, and yet how small a proportion of our farmers are thoroughly aroused to the value and importance of such efforts, or even conscious of how much has been accomplished by them. During these years, through what an alternation of hopes and despondencies, successes and failures, have the pioneers in this cause passed! Many of them have gone to their rest, yet their works do follow them. Their mark is deep and distinct on the movements then commenced, and now progressing towards maturity, and the debt of gratitude, their due, will some day be fully acknowledged and paid.

The farmers of Maine are indebted to the late Benjamin Vaughan, LL. D., and to his brother Charles Vaughan of Hallowell, for the earlest associated impulse given to agricultural improvement in the state.* They were Englishmen by birth. possessed of ample fortune, and took great pleasure in agriculture and horticulture, particularly the latter. To these pursuits Dr. Vaughan gave his entire attention; and it is not too much to say that the people of Kennebec county are more largely indebted to these gentlemen for the high reputation which they enjoy as farmers, for the superiority of their farm stock, and for their horticulture, than to any others.

In 1787, a number of individuals on the Kennebec river, associated themselves together, under the name of the "Kennebec Agricultural Society," the objects of which were, mutual improvement in agricultural knowledge, and mutual aid, by the importation of trees, seeds, tools, books, etc. The leading and animating spirits in this movement were the Messrs. Vaughan.

In 1791–2, the Messrs. Vaughan—Charles taking the lead, made their first importation of cattle, seeds, trees, tools, etc. Their cattle were selected in the Smithfield market, by a friend and agent, who was directed to select such a combination of points as would insure size, strength, availability for work, and good milking properties. Bakewell's breed was then in the ascendant in England, and these imported cattle were of that stock, with a touch of what was then, and indeed, is still known as the "Long Horns." It was an excellent thing for Maine. They succeeded admirably. And notwithstanding all the mixtures that have been made among Kennebec cattle since, evidences are often apparent of this blood, at the present time, among the best cattle of that county.

In 1807, the above named society was incorporated by the Massachusetts Legislature. They held no exhibitions; but had frequent meetings for the reading of papers contributed by members, and for consultation and discussion. "The Massachusetts Agricultural Repository," has many papers from this society in its columns, which bear abundant evidence of the industry and ability of its members.

---

* See Appendix A.

In 1818, through the instrumentality of the Messrs. Vaughan and their friends, among whom may be named the Messrs. Wood, of Winthrop, the "Maine Agricultural Society" was incorporated. This society was organized, but had no funds except what were derived from entry fees of members. In 1820, means had accumulated sufficient to authorize an exhibition and the giving of premiums; and a show was accordingly held in Hallowell. The next year another was held in the same place. These exhausted their funds and demonstrated another fact, namely, that owing to the difficulty of *transportation*, only a small section of the state could be benefited by them. They therefore ceased; and it was concluded by its friends that this society had better discontinue action, and county shows be adopted in its stead.*

In 1818, several citizens of Winthrop, led by the Messrs. Wood, formed the "Winthrop Agricultural Society." This became a very active and efficient association. It soon spread into adjoining towns; held annual shows; assigned "*tasks*" † to its members; held meetings for discussion and became exceedingly useful. This society continued active until 1831–2, when at one of its meetings it was resolved that it would be preferable to establish a county society, merge themselves in it, and petition the Legislature for a charter and for funds. A committee was chosen, of which Major Elijah Wood was chairman and principal agent. Accordingly, when the Legislature assembled, as he used to say, "he took lodgings in Augusta, with the determination to *worry* them into some effectual action for the promotion of agriculture in Maine." It is said that the incidents of this campaign would make quite an amusing chapter in the history of agricultural effort.

Mr. Wood entered on his mission with a zeal becoming the importance of the end sought. He was indefatigable in fighting

---

*We regret to notice that the discontinuance of this Society, has, in one or more instances, been attributed to its being conducted by "*fancy* farmers," or visionary schemers, and because practical men had no hand in its management. There is the best authority for asserting that such is not the fact, but far otherwise, and that the old State Society ceased for no other cause than the one stated above.

†The "tasks" were topics or questions for discussion.

the opposition, ingenious in answering objections, and untiring in efforts to stir up the well-disposed, but uninterested. His hardest opponents, he always declared, were among the farmers themselves—a declaration but too true at the present time. After various consultations and modification of plans, the law of 1832 was framed and passed, which was as follows:

"SECT. 1. The treasurer of the state is hereby authorized and directed to pay to the treasurer of any agricultural society, or any agricultural or horticultural society, whenever any such treasurer shall apply for the same, a sum equal to that, which said society may have raised and actually received, by subscription or otherwise, within the next preceding year; all of which sums shall be appropriated to the purposes, specified in the charter of said society.

SECT. 2. If there be three such societies in a county, the payment from the state treasury shall not exceed one hundred dollars to each of them; if two, and only two, one hundred and fifty dollars to each of them; and, if there be only one such society, the payment thereto shall not exceed three hundred dollars.

SECT. 3. None of the aforesaid payments shall be made, till the treasurer of such society shall file, with the state treasurer, a certificate on oath, therein specifying the amount raised and actually paid in, to said society.

SECT. 4. Every society, availing itself of the benefit of this chapter, shall, at their discretion, annually and publicly, offer premiums for introducing or improving any breed of useful cattle or animals, or any tools or implements of husbandry or manufacture; introducing, raising or preserving any valuable trees, shrubs or plants; or, in any way, encouraging or advancing any of the branches or departments of agriculture, horticulture or manufactures; and no such society, by their by-laws shall confine such premiums to their own members, but shall bestow them on any person residing within the limits of such society, who shall produce the best specimens."

From this it will be seen that nothing was attempted except in Kennebec county, up to the above date. Here was the centre of interest and effort prior to 1832. But the efforts to secure legislative action in behalf of this cause, seem to have arrested public attention throughout the entire State, and in some sections, to have awakened interest enough to secure efficient action; for during the session of the same Legislature which passed this law, three societies, beside the Kennebec, were incorporated. From this time agricultural improvement advanced more rapidly. It had a staff to lean upon—a sort of balance wheel to regulate its machinery.

The Kennebec Agricultural Society was already an organized body, and ready to go to work with greater energy under the new law. At its first annual show, in the fall of 1832, it was resolved, that it was expedient and necessary, that the farmers of Maine should have an organ devoted to their profession, through which they could communicate with each other; and in 1833, Dr. E. Holmes of Winthrop, commenced editing the "Kennebec Farmer," which title was soon after changed to the "Maine Farmer," a paper well known and appreciated by a large body of the farmers of this State at the present time. The influence for good, which this paper has exerted on the cause of agriculture in Maine, is beyond estimate.*

Since 1832, organized effort has progressed more rapidly throughout the State, as will be seen by the following list of societies, with the time of their incorporation:

1.	Kennebec	County	Agricultural	Society,	incorporated	1832.
2.	Cumberland	"	"	"	"	1832.
3.	Washington	"	"	"	"	1832.
4.	East Somerset		"	"	"	1832.
5.	Penobscot County		"	"	"	1838.
6.	Somerset Central		"	"	"	1838.
7.	Franklin County		"	"	"	1840.
8.	Oxford	"	"	"	"	1841.
9.	York †	"	"	"	"	1841.
10.	Aroostook	"	"	"	"	1846.
11.	Waldo	"	"	"	"	1847.
12.	North Kennebec		"	"	"	1847.
13.	West Somerset		"	"	"	1848.
14.	North Aroostook		"	"	"	1850.
15.	West Oxford		"	"	"	1851.
16.	Androscoggin Co. ‡		"	"	"	1852.
17.	Lincoln County		"	"	"	1852.

---

* For most of the above facts, we are indebted to that veteran in the cause, Dr. E. Holmes of Winthrop, above alluded to.

† This was incorporated under the title of the "Ossipee Agricultural Association," but no action was had until September, 1846; and the name was changed as above, June, 1847, since which time it has been eminently successful and efficient.

‡ Originally the "West Lincoln Agricultural Society"—name changed as above in 1852.

18.	North Franklin	Agricultural	Society,	incorporated	1852.
19.	North Penobscot	"	"	"	1852.
20.	Penobscot and Aroostook Union	Agricultural	Society,	incorporated	1853.
21.	Piscataquis Central	Agricultural	Society,	incorporated	1853.
22.	South Kennebec	"	"	"	1853.
23.	Sagadahoc County	"	"	"	1853.
24.	West Penobscot	"	"	"	1855.
25.	Maine State	"	"	"	1855.
26.	North Somerset	"	"	"	1856.

The act of 1832 remained in force, without any material amendments, up to 1852, a period of twenty years. This law, though defective in some points, was a very important step in advance, and has been productive of immense good to the State. But it would have accomplished more, had the provisions been complied with, in regard to the printing and distribution of public documents. The following is the law in relation to this matter:

"SECT. 5. Such society shall be held to apply to some or all of the purposes, mentioned in the preceding section, a sum, in each year, equal at least to that received from the state; and shall, annually in the month of January, transmit to the secretary of state an official statement of its expenditures, expressing the object for which premiums have been awarded, and to whom paid, accompanied by such general observations as may be deemed useful.

SECT. 8. The secretary of state shall, annually on or before the first day of February, lay said official statements before the legislature, to be submitted to a committee on agriculture, who may publish extracts therefrom, and such essays, relative to the subject, as they may think adapted to the advancement of agriculture and horticulture; and the legislature may cause a suitable number of copies to be distributed."

In conformity with this provision, the several agricultural societies annually made returns to the secretary of state. He duly transmitted the same to the Legislature, and they were by this body referred to the Joint Standing Committee on Agriculture. But in no single instance does it appear that any article or document was published, or prepared, embracing the substance of these reports; nor does it appear that they were even cared for sufficiently to be returned to the secretary's office for safe keeping. Thus, for some twenty years, one great object in the bestowal of state bounty on the several societies, viz: the diffusion of the information—the results of experience—accumulated through their agency, utterly failed of accomplishment.

During this period, efforts were not wanting to introduce a better state of things; but, little was accomplished until 1852, when an act passed the Legislature establishing a Board of Agriculture; nor was this act what its friends desired, for in its passage, the original bill was so amended, or whittled away, as to be well nigh deprived of efficiency. It was as follows:

An act to establish a Board of Agriculture.

Be it enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECT. 1. Each of the incorporated agricultural societies in this state, shall, at their meetings in the fall for the purpose of holding their cattle shows and fairs, choose one of their members, who shall thereby be a member of the board of agriculture of the State of Maine.

SECT. 2. Every person thus chosen shall receive credentials of the fact of his being thus chosen a member of said board of agriculture, signed by the president and secretary of his respective society, and he shall be paid for his services, a sum not exceeding two dollars per day, out of the moneys received by said society from the state in accordance with chapter eighty-two of revised statutes.

SECT. 3. The board of agriculture shall hold a meeting at Augusta, on the third Wednesday of January, annually, when they shall organize by the choice of a president, secretary and such other officers as they may deem necessary. It shall be the duty of the board to discuss such subjects as pertain to the agricultural interests of the state, and to devise and recommend, from time to time, to the several agricultural societies in the state, and to the people, facts, improvements, discoveries and views, in regard to the then present condition and future prosperity of agriculture in the state, and to annually make to the legislature, through the joint standing legislative committee on agriculture, a report on said subjects, which shall be published by the legislature as a public document for distribution among the people.

SECT. 4. It shall be the duty of the secretary of the board, in addition to keeping the records of the doings of the board, to prepare for the press all matter which the board shall order to be published, and shall superintend the publication of the same; for which services he shall receive one hundred dollars per annum, out of any unappropriated moneys in the treasury of the state.

[Approved April 23, 1852.]

This act, it will be seen, bestows no power beyond that of assembling annually for discussion. It charges the board to devise and recommend to the county societies, and to the people, facts, discoveries, improvements, &c., but withholds the necessary means to accomplish the end; no one being charged with, or compensated for, the time and labor necessary in the collection and digestion of material,—*the Secretary receiving barely the sum of one hundred dollars for the preparation of such matter as the board might order printed, and for superintending the publication of the same.* Thus, with considerable form, there was little substance,—semblance, without reality.

In conformity with the requirements of this act, the board met at Augusta in January, 1853. The session (of ten days) was devoted to the consideration of such topics as seemed to the members most important to the interests of agriculture. The subject of agricultural education occupied a very large share of their attention. There was found to be a great diversity of opinion among the members, on most of the topics introduced, as well as upon the means to be used to gain the purposes sought. The result of their labors, in tangible shape, was the publication of a volume of the transactions of the county societies. Their meeting had the effect, not only to reveal the diversity of opinions and schemes, among the intelligent farmers of the State, in relation to the means to be used to attain the ends which all were seeking, but also to turn thought more in one direction, and thus harmonize views and schemes.

In January, 1854, the board met again; during which session, the leading matter of consideration, was the means to be used to foster agricultural education. Various schemes were proposed, but only one was commended to public attention, which was, that the study of agriculture be introduced into our common schools, and that the superintending school committees of the several towns adopt a suitable text book on this subject, to be used in the schools under their supervision.

The board held its third annual session according to law, in 1855. A large share of the members were new. By this time, the law under which it had existence, had come to be well understood, and its defects fully apparent. Most of the members were convinced that something should be done immediately to secure its amendment, so as to enable the board to act efficiently. It was also thought, that the law under which the county societies operated, was defective in several particulars, and that the formation of a state society would greatly assist agricultural improvement.

In conformity with these views and purposes, the chief part of the session was devoted to the maturing of bills in conformity with the views of the board. These bills, three in number, were framed and reported to the Joint Standing Committee of the Legislature, on Agriculture. One, re-organizing the Board of Agriculture; another, more fully defining the powers and duties of agricultural and horticultural societies; and the third, incorporating the Maine State Agricultural Society. The consideration of these bills consumed so much of the session, that other topics could receive little consideration; but the subject of agricultural education was deemed of so much moment, that a committee was appointed to report on the subject after the adjournment of the board.*

The legislative committee did not report the bills left with them by the board, but framed one instead, combining portions of the three, incorporating and endowing a State Agricultural Society, an executive committee of which, was to transact all its business, and also to have powers and duties proper to a Board of Agriculture; and also more fully prescribing the powers and duties of the local societies.

It must necessarily require no little skill to arrange the details of a bill so comprehensive as this, and grouping together things so essentially distinct, that all its parts would work harmoniously. Such did not prove to have been the case with this. It was, however, enacted by the Legislature, doubtless with the belief that it was substantially what was asked for. But upon examination, it was found so objectionable, that the corporators, upon assembling to discuss its adoption, only consented to do so, as otherwise, (such were its provisions, all other legislation upon the subject of agriculture being by this repealed, except the acts incorporating the local societies,) all the operations then active throughout the State would cease.

---

*See Appendix B.

In January, 1856, the executive committee of the state society met as provided by law, and was found to be composed in part, of members elected by the county societies expressly for the purpose of using their influence to secure the repeal of the obnoxious statute. Hence, one of the first steps taken on their assembling, was the consideration of this subject. The result of mature deliberation was the re-adoption of the three bills of the previous session, with a few unimportant amendments; and they were accordingly reported to the appropriate committee, with the request that if they could not be passed, that the enactment then in force might at least be repealed, thus leaving them in no worse condition than before. The remainder, and larger portion of the session was occupied in the discharge of their duties to the *State Society*, as its *committee*, and chiefly in the preparation of a schedule of premiums to be offered, and of the lists of questions to be answered by competitors, in order to elicit the greatest practicable amount of accurate and definite statements regarding the best modes of growing crops, raising cattle, the manufacture of dairy products, etc., so that the results of experience thus gained might be made available to all the farmers of the state.

The bills as reported were acceptable to the committee of the Legislature, which was composed in part of some of the most intelligent and successful cultivators of the soil. But during their passage, objections were raised and some alterations made; one reducing the number of members to one from each county, instead of one from each incorporated society; another rendering the election of *all* its members annual, instead of a third each year, as proposed, (and similar to the plan now so satisfactorily in operation regarding county commissioners and superintending school committees) the effect of which must be, that plans, schemes and discussions with the trains of thought connected therewith, of one session, are liable to be repeated over and over again at subsequent ones, and thus, the whole of the brief period allotted, virtually lost; whereas, by the other mode, conclusions and results once obtained, are so much actual gain, and the time saved for farther advances. Objection was also made to allowing *horticultural* societies to share in the bounty of the state, as they have hitherto done, on the ground that *no practical good* thus resulted to the *agricultural* interest.

But is there any force or truth in such objection? Where do *improvements* mainly *originate?* Is it not in the *garden,* rather than in the field—by the experiments of *horti*culturists on a small scale? Where was first discovered the value of *deep* tillage, *draining, thorough* cultivation? Certainly, in the garden, and introduced *thence* to the field. And as to the improvement, trial and proof of new vegetables, how is it? Let the history of the *potato* answer. This indispensable vegetable was discovered and introduced into Europe, A. D., 1585. For more than a hundred and fifty years after Sir Walter Raleigh planted the potato in his garden, was its culture confined to the garden. It was not until A. D., 1752, that it was first grown as a *field crop,*—in Scotland.

Times have changed since then. Culture has improved by the application of scientific principles to its practice—intercommunication and exchange of knowledge have immeasurably increased, so that ten years might now suffice to effect what then occupied a century and a half, and because of this, is the garden not of less, but greater, value than before. How is it in regard to fruit? What were the apples and pears of a hundred years ago, and to whom are we indebted for their improvement? Multiplied instances might be adduced to show, beyond all cavil, that the labors, experiments and researches of the *horti*culturist are at once available, and often invaluable, to the *agri*culturist. In fact, the two pursuits are as intimately connected as the blossom and the fruit. True, some of the blossoms may be abortive, but when otherwise, the agriculturist pockets the fruit. To the one we are indebted for the patiently protracted trials of which the other reaps the benefit.

The changes above alluded to, are believed to be decidedly injurious, and materially to hinder their usefulness, yet they were submitted to in the hope that some future Legislature would remedy the defects. They finally passed without opposition, and are as follows:—

An act to amend chapter one hundred and eighty-seven of the laws of eighteen hundred and fifty-five.

Be it enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECT. 1. All of chapter one hundred and eighty-seven of the laws of eighteen hundred and fifty-five, approved March seventeenth, eighteen hundred and fifty-five, except the first section, is hereby repealed.

SECT. 2. At each annual meeting of said society, it shall elect, by ballot, a president, secretary, and such other officers as may be deemed necessary, and thirteen members shall constitute a quorum for the transaction of business.

SECT. 3. Said society may take and hold property, real and personal, the annual income of which shall not exceed five thousand dollars, to be applied exclusively to the advancement of agriculture, horticulture, and the arts connected therewith; and the treasurer of said society shall give suitable bonds to the board of trustees for the safe keeping of said property, and for the faithful discharge of his duties.

SECT. 4. There shall be paid from the treasury of state, each year, during the next five years, after the passage of this act, as many dollars as may be raised by said society, by assessment on the members thereof, or otherwise, not exceeding one thousand dollars in each year; and the governor and council, on presentation of a certificate, signed by the president thereof, stating the amount of money thus raised and actually received as the property and for the benefit of said society, shall draw their warrant for a like amount as above specified.

SECT. 5. The money received from the state shall be paid in premiums, for the encouragement of the various departments of agriculture, horticulture, and the arts connected therewith; and a full and correct statement of such expenditures, together with the several reports of the committees, and the statements of the several competitors, shall be annually transmitted to the Board of Agriculture through the secretary, the same as the county societies are required to do.

SECT. 6. The several presidents of the county agricultural societies, who are members of the state society, shall be, *ex officio*, vice presidents thereof.

SECT. 7. A committee of five, consisting of Samuel F. Perley, Seth Scammon, Francis Purington, Daniel Lancaster and J. D. Lang, shall perform the duties of a board of trustees of said society, until a board of trustees be chosen in conformity with the constitution of said society.

[Approved March 22, 1856.]

An act more fully prescribing the power and duties of agricultural societies.

Be it enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECT. 1. The treasurer of state is hereby authorized and directed to pay to the treasurer of any agricultural society whenever any such treasurer shall apply for the same in conformity with the conditions hereinafter specified, a sum equal to that raised and actually received by any such society within the next preceding year, and not exceeding in cases where there are three such societies in a county, one hundred and fifty dollars to each of them; where there are two, and only two, two hundred dollars to each of them, and where there is only one such society in a county, three hundred dollars; in case a society is made up of parts of two counties, one hundred and fifty dollars.

SECT. 2. None of the aforesaid payments shall be made until the treasurer of such society shall file with the state treasurer, a certificate on oath, therein specifying the amount raised and actually paid in to said society, and also a certificate from the secretary of the Board of Agriculture, that said society has complied with all the requirements of section fifth of this act.

SECT. 3. Every agricultural society which shall receive the said allowance from the state treasury, shall award annually by way of premiums, or shall apply otherwise at their discretion, for the encouragement or improvement of agriculture or manufactures, a sum not less than the amount annually received from the state.

SECT. 4. It shall be the duty of every agricultural society, applying for the bounty of the state, to require of all competitors for premiums to fill up the blanks furnished by the secretary of the Board of Agriculture, for such purpose, by answering all the questions therein proposed, to the best of their knowledge and belief, and present the same to the several awarding committees, with their application for premiums; and said committees shall file all such returns with their list of awards, and return the same to the treasurer of such society; and no such treasurer shall pay any such premiums that may be awarded by such committees which are not accompanied by such returns as above specified.

SECT. 5. It shall be the duty of the treasurers of all agricultural societies, within seven days after receiving the returns from the several awarding committees, as provided for in the fourth section of this act, to place the same in the hands of the secretary of such society, with a list of the premiums awarded by such committees, so far as practicable; the amount of such premiums, together with such other expenditures as may be made in conformity to section third; and said secretary shall annually, on or before the third Wednesday in November, forward to the secretary of the Board of Agriculture, said list, blanks and returns thereon, retaining copies thereof for the use of said society, except those relating to field crops and fruits, which shall be returned on or before the first Wednesday of December in each year; and the secretary of the Board of Agriculture, on the receipt and examination of such lists, blanks and returns thereon, shall furnish the treasurer of such society with a certificate required in section second of this act;

and no society failing to comply with the conditions above specified shall be entitled to draw any money from the state treasury.

SECT. 6. All incorporated agricultural societies may, by their officers, define and fix bounds of sufficient extent for the erection of their cattle pens and yards, and for convenient passage ways to and about the same, on the days of their cattle shows and exhibitions, and also for their plowing matches and trial of working teams, within which bounds no person shall be permitted to enter or pass unless in conformity with the regulations of the officers of said society respectively.

SECT. 7. If any person shall, contrary to the regulations of said officers, and after notice thereof, enter or pass within the bounds so fixed, he shall forfeit a sum not exceeding five dollars, to be recovered on complaint in behalf of the State, in any court competent to try the same, for the use and benefit of such society.

SECT. 8. The foregoing provisions shall not authorize such societies to occupy or include within the bounds which they shall fix for the purposes aforesaid, the land of any person without his consent, nor to occupy any turnpike or public highway, in any such manner as to obstruct the public travel.

SECT. 9. The officers of any such society may appoint a sufficient number of suitable persons, inhabitants of the county, to act as constables at cattle shows and exhibitions; and they shall have and exercise all the powers of constables in relation to the preservation of the public peace, and enforcing the rules and regulations of said society within the towns, respectively where such shows and exhibitions may be held; and they shall exercise their office from twelve o'clock at noon the day preceding the commencement of such shows and exhibitions, and until twelve o'clock at noon of the day succeeding the termination thereof, and no longer.

SECT. 10. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

[Approved April 1, 1856.]

An act to establish a Board of Agriculture.

Be it enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECT. 1. A State Board of Agriculture is hereby established, to consist of one member from each county in the State, and the governor and secretary of state shall be members *ex officio*. Said members shall hold their offices for the term of one year, and shall be elected by ballot, as follows: Where there is but one agricultural society, the member shall be elected annually; where there is more than one, the oldest incorporated society shall elect the first year, and the others in successive years by rotation, according to the dates of their respective incorporations. No member or officer of the Legislature shall be a member of the Board of Agriculture, and in all cases the members shall be elected at the annual meetings or fairs of such societies, or at any regular meetings thereof called for such purpose, and they shall receive a certificate of their election, signed by the president and secretary of such society; and in case of any vacancy occurring in the representation of any society at this board, it may be filled by an appointment by the president and secretary of such society.

SECT. 2. And the first meeting of said board, shall be held at the state house in Augusta, on the third Wednesday of January next.

SECT. 3. At the first meeting of the Board of Agriculture, and at each annual meeting on the third Wednesday of January thereafter, the board shall organize by the choice of a president and such other officers as may be deemed necessary.

SECT. 4. It shall be the duty of this board to investigate all such subjects relating to agriculture, horticulture and the arts connected therewith in this state, as they may think proper; and it is hereby empowered to take, hold in trust, and exercise control over, any donations or bequests that may be made to it for promoting agricultural education, or the general interests of husbandry.

SECT. 5. The Board of Agriculture shall meet at the state house in Augusta, once a year; and they are hereby empowered annually to elect a suitable person to act as secretary of the board, and to prescribe and determine his duties; and in case of vacancy by death or otherwise, the governor with the advice of his council, is hereby empowered to fill the same. And all reports and returns required by law to be made by said societies, shall be made and returned to the secretary of this board. The governor and council shall determine his compensation, which shall not exceed eight hundred dollars per annum; and the compensation of the members of the Board of Agriculture shall be the same as the members of the Legislature, for a term not exceeding ten days. And the said board shall, annually, on or before the second Wednesday of January, by its secretary, submit to the Legislature a detailed report of its doings, together with a digest of the returns of the several agricultural and horticultural societies, and of such statistics as he may be able to collect, with such recommendations and suggestions as the interests of agriculture may be deemed to require, and cause not more than three thousand copies thereof to be printed by the printer of the state, five hundred thereof being for the use of the Legislature, and the remainder for distribution, under the direction of the board, among the farmers of the state.

SECT. 6. The governor shall draw his warrant on the treasurer, from time to time, for such sums of money as may be necessary to defray the salaries and expenses provided for by this act, an account thereof having been first rendered by the secretary of the board, and audited by the executive council; and a sum not exceeding one thousand five hundred dollars annually is hereby appropriated to meet such expenses.

SECT. 7. The present executive committee of the state agricultural society, shall constitute the Board of Agriculture for the current year.

SECT. 8. All acts and parts of acts inconsistent with this act are hereby repealed.

[Approved April 1, 1856.]

The present laws are unquestionably a decided advance upon any previous enactments, and it is confidently believed that future Legislatures, enlightened by the experience of others, and especially that of our maternal State, imbued with the progressive spirit of this nineteenth century, and prompted by the demands of their constituents, may not only remedy their defects, but also pass such other enactments as the prosperity of this great interest may from time to time require.

From this brief sketch, it is apparent, that even after more than a quarter of a century of effort on the part of the most intelligent farmers of the State, the Legislature has scarcely granted their prayer, modest as it has been. Progress has been made, but very slowly. Why has it been thus tardy? Several causes may be named, one of which is a lack of unanimity as to the precise means most expedient to compass the desired end. It is perfectly natural that this should be the case, as the field of action is so broad, the interest so vast, and the means so varied, that it is not strange if opinions vary also as to their relative merits. Another, is the indifference of the mass of unintelligent farmers to *any* improvements, content, if not determined, to tread only in the beaten track of their ancestors. A third, and the worst is, that among the legislators themselves, there have usually been a few farmers (or nominally such) who seem so thoroughly imbued with the conviction that every dollar expended is absolutely lost, and that every penny saved is necessarily so much clear gain, that it is utterly incomprehensible how they could ever be induced to scatter seed or spread manure, instead of *saving* both, and whose views of the ultimate end and aim of legislation would seem best met and realized by abolishing taxation, or perhaps more justly, by reducing it to the needful amount to pay their per diem allowance and travel. Such men have ever been steadily and uncompromisingly opposed to every movement in behalf of agriculture, involving the least expenditure whatever; and it cannot be wondered at, if those, otherwise well disposed, should hesitate when opposed by some of the very men apparently representing the interest to be benefited. These causes are all steadily giving way. More liberal views obtain, interest is awakening among those before torpid and lethargic, views as to the preferable measures to secure advancement are harmonizing. This is to be attributed in no small degree to the obvious good already accomplished by the agencies in operation, and we are warranted in expecting that its progress will be rapid in proportion to judicious effort hereafter.

That the county societies have been productive of great good, and have already repaid many fold, the aid received from the State, is obvious to all who have watched their effects. They have awakened interest, inquiry and thought, excited emulation, diffused knowledge, by their reports, addresses, and the mutual interchange of views and practice, and the communication of each other's successes and failures.

There is a fitness in them, too, as a means of improvement, arising from the fact that agriculturists are by the nature of their occupation more isolated than others. The farmer for the most part must abide upon his own acres; he cannot, like the manufacturer, visit all the establishments similar to his own, in order to profit at the earliest moment, by the discoveries and improvements of others, nor are his products, being largely consumed at home, subjected to comparison and competition in the markets of the world, to an extent so suggestive as those of others.

Another form of association which prevails to some extent in the State, is worthy of notice, as capable of accomplishing in an agreeable way, a great amount of good. I allude to FARMER'S CLUBS, each embracing a town or neighborhood, with meetings for discussion, the reading of papers prepared by its members, and in every practicable way aiding and encouraging one another. Their scattered lights, though before obscure, if not actually under a bushel, are thus concentrated, and enlighten all. By a moderate contribution to a common fund, the best agricultural books and periodicals are made easily available, and they may also thus combine for the purchase of desirable labor-saving machinery, too costly for the separate means of any. The testimony as to their utility from those who have engaged in them is ample and satisfactory, and their establishment in every neighborhood is specially recommended to the farmers of the State.

In March, 1836, a resolve passed the Legislature, authorizing a geological survey of the State, under which the services of Dr. Charles T. Jackson were engaged. He entered upon the labor that year, and the survey was continued during 1837 and 1838, when it was suspended, probably in consequence of the pecuniary pressure which the treasury of the State, in common with its citizens, experienced at that period. His labors were of great value in developing the mineral and agricultural resources and capabilities of the State, and it is much to be regretted that the survey was not fully completed. With a view to effect this, resolves were passed March, 1855, and an appropriation made for "The continuation of the Geological and Agricultural Survey of the State." One of these resolves provided that "the geologist be required to make an accurate analysis of the soil of at least two different localities in each town in the State," and as the expense of these six to eight hundred *accurate* analyses thus required, would absorb the whole appropriation, it is not strange that the resolves proved inoperative, whereas, had this requisition been omitted, the work would probably before this have been completed, the geologist analyzing, as before, in such instances as circumstances seemed to demand.

Besides the legislation before mentioned, there have been at various times special enactments granting bounties to encourage the growth of various products, wheat, corn, &c. Production was doubtless largely affected by these bounties, but the increase was found temporary and evanescent. The policy was always deemed somewhat questionable, the advocates of free trade ever steadily opposing it, as merely stimulating, and the conviction is now very generally entertained, that, like other stimulants, though perhaps sometimes necessary to arouse morbid inaction, they are of more than questionable utility as a staple article of diet, either for individuals or for the commonwealth.

It is not proposed to enlarge upon what may or may not be the proper and legitimate scope of legislation, either of the State or of the General Government, in behalf of agriculture. That an interest of so vastly greater magnitude than any other, is entitled to the fostering aid and care of government, cannot be doubted. While commerce and manufactures, the one busied in exchange of products, and the other in modifying their form, demand and receive governmental aid, surely the *producing* interest, not only paramount to all others, but upon which all other interests depend, should not be forgotten. However doubtful may be the expediency of some of the means or modes proposed, it would seem that there can be no question as to efforts for the *diffusion of knowledge*, whether by furnishing educational facilities, adapted to the profession of agriculture, by the dissemination of printed matter, or in any other feasible mode.

To see how readily, effectually, and practically this may operate, let us look at a single instance. Nobody doubts that an indispensible requisite to successful farming is an adequate supply of manure to feed the crops. It is equally certain that not less than one-half of the fertilizing materials on the farms of the State is lost or wasted, for lack of knowledge as to their proper management. Now let the farmers learn fully the use of barn cellars, absorbents, and other means of saving, and also the value of the thousands of tons of decayed vegetable matter which they possess in the form of muck or peat, *when properly treated,* and the manure saved or made would at once be more than doubled, *and production correspondingly increased.* Reckoning this increase at only an average of one hundred dollars to each of the forty-six thousand farms of the State, (who can doubt that if the means of fertilization were doubled, the value of increased products would exceed this sum ?) and there appears to be a substantial addition to the property of the commonwealth, in the sum of four millions six hundred thousand dollars, and this not for once only, but as easily repeated every year.

The same argument applies equally to improved modes of culture, breeds of cattle, and all else pertaining to the farm. This may appear a startling result, but are the premises without foundation, or is the arithmetic at fault?

In concluding upon this topic, let me quote the language and sentiments of one, who as a sound practical farmer, as little needs indorsement as in other regards—"It will not be doubted that, with reference either to individual or national welfare, agriculture is of primary importance. In proportion as nations advance in population and other circumstances of maturity, this truth becomes more and more an object of public patronage. Institutions for promoting it grow up, supported by the public purse; and to what object can it be dedicated with greater success than the establishment of boards composed of proper characters, charged with collecting and diffusing information, and enabled by premiums and small pecuniary aids, to encourage and assist a spirit of discovery and improvement? This species of establishments contributes doubly to the increase of improvement, by stimulating to enterprise and experiment, and by drawing to a common centre the results everywhere of individual skill and observation, and spreading them thence over the whole nation. Experience accordingly has shown that they are very cheap instruments of immense national benefits."

[Washington's Message to Congress, Dec., 1796.]

Wants of Agriculture.

These are too numerous to be mentioned in detail, and our effort will be simply to discuss a few of the more urgent and comprehensive; and the first is, the adoption into its practice, of those habits of system, method, and accuracy, which are found indispensable to success in all branches of business whatever—*business habits;* or in other words, that agriculture be pursued *as a business,* in distinction from and preference to, pursuing it as a calling or employment, by means of which the tiller of the soil hopes to *earn* his bread, his taxes, and something more. This is not a distinction without a difference, nor is the difference a trivial one. By employment, is understood that in which labor and skill are disposed of for an equivalent. The mechanic who works for wages does this, and cannot properly be termed a business man. If a good workman at his calling, prudent and economical in the management of his affairs, he is a thriving man. He gradually acquires a competency, or it may be, wealth, but it is plainly upon his *earnings*, that he does this, and not upon his *profits*. In it, he is not transacting business, but simply disposes of his labor and skill at their market value. Business, on the other hand, is not employment in which a man earns wages simply, but that in which profit is to be realized or loss incurred, as it is successful or otherwise, aside from, and independent of, wages. As farming is conducted in this State, is it a business or an occupation? Is it looked upon by those engaged in it, as that which simply affords remuneration for services rendered, or as that which yields a net profit over and above wages, interest upon capital, and all expenses? It is believed few will pretend, that as at present managed, with a very few exceptions, it is an occupation of which profit or loss can be fairly predicated, but is rather a calling, by means of which the cultivator hopes to earn a livelihood. Few indeed are there who can even tell what their crops, or any other farm products cost, or whether when sold, they yield a profit or not; and what should we think of a business man who did not know the cost of the wares in which he deals?

Now I hold that *until agriculture be pursued as a business, and until we have faith in it as a profitable one*, it can never attain the degree of improvement otherwise practicable, and there are some considerations going to show that farmers now generally *lack faith* in their pursuit as a business, some of which will be noticed; and first, it is very common to hear farmers say they cannot afford to hire help to carry on their farms. Why this, if they have confidence in it as yielding a profit after paying wages and other expenses? It is not so with the merchant and manufacturer, for they unhesitatingly employ all the help necessary to carry on their business, and because they have confidence in it, believing that those they employ will not only earn their wages, but will themselves reap a profit as the ultimate result of their labor. Another fact: suppose a farmer with prudence and economy, by rising early and working late, and eating the bread of carefulness, amasses some dollars, what does he do with them? Does he, as do the merchant and manufacturer, invest them in his business to increase his working capital, and improve or enlarge his operations? No; as a body, our thrifty farmers are content to loan their dollars at legal interest, on good security, and perhaps to a trader or manufacturer, who by employing them *in his business*, is enabled to pay the interest, and realize a profit upon their use. If the farmer had faith in his occupation as a business, he would save this profit to himself, as well as secure the interest. Again, men in business, if they have not ample capital, do not hesitate to borrow money to carry it on, and sometimes at rates of interest above the legal one; and they do this because they believe that by so doing, they can pay the interest, and make a profit beside, while with our farmers, who as a body are confessedly embarrassed for want of working capital, not one in a dozen dares to borrow money to invest in agricultural operations. They may, from necessity, incur debt for the purchase of lands, the erection of buildings, &c., which becomes fixed capital, but very few are they who dare to borrow to use as working capital. It is not so in other countries. In England agriculturists make, what to us, with our style of farming, seems the most lavish use of working capital in their operations, as well as landholders of fixed capital in permanent improvements. It is not uncommon there for the landlords to add to the value of their estates beyond the cost of the land, buildings and enclosures, from forty to a hundred dollars per acre in permanent improvements, as thorough draining, &c., and then for farmers to rent such at the usual rates of interest on fixed capital, and themselves using from thirty to sixty dollars per acre of working capital to carry it on; and they do a profitable business at it. The money-lending farmers of Maine would probably much prefer to see an operator bold enough to do likewise, put under guardianship, rather than trust him with any of their funds.

Lavergne, in his interesting and valuable work on the Rural Economy of England, Scotland, &c., comparing English and French agriculture, says: "All make advances to the land with implicit confidence. In that country, where manufactures and commerce offer such inducements for the employment of capital, many people prefer to embark their money in agriculture. While our farmers are sparing to the last degree, considering that what is saved is gain, in England they try who can put most money into the land. The small farmer, who has only a few hundred pounds of patrimony, does not hesitate to embark it any more than the great capitalist who has ten times, or a hundred times as much. Both launch out together, and generally upon the faith of an ordinary annual lease, expending sums which would seem enormous with us, and which proprietors alone would here undertake."

How can this wide difference between the farmers of Maine and the farmers of England, where agriculture has confessedly attained the highest degree of improvement yet developed any where, or between our farmers and business men, properly so called, immediately around them, be accounted for otherwise than because the one lacks, and the other has faith in it as a business in which capital and skill may be profitably employed?

If it be inquired how this lack of confidence has so generally obtained, the answer may probably be found, in part, from the imperfect modes of cultivation generally pursued, and which result in far too scanty and precarious crops, but mainly from the fact that farming is not, except in a few isolated cases, carried on in such a systematic manner, that the operators themselves know with certainty, whether the pursuit yields a profit or not. Hence the question so often asked, whether farming be profitable or not, has received widely different answers, or rather opinions, and the reason is, that there are scarce any data from which to judge.

It is an undoubted fact, that agricultural pursuits are more surely remunerative, and more certainly yield a comfortable competence to such as engage in them with skill, energy and perseverance, than trade, commerce, manufactures, or any of the so called learned professions. It has been shown on good authority, that about two-thirds of those who engage in trade make disastrous failure of it; that about one-third only are even moderately successful, and only one in a hundred eminently so. With the tillers of the soil, it is otherwise. Few either fail or amass great wealth, while the great majority attain comparative competence and comfort.

But in order to command confidence as a pursuit, and to attract all needful aids to the highest degree of successful development, it is necessary to show that it actually does, or may be made to yield a fair profit on capital invested, over and above wages and all other charges. And how is this point to be settled? Plainly in the same manner as the merchant or manufacturer determines the same point in relation to their business — viz: by keeping exact accounts and making the proper entries to debt and credit. The trader charges the cost of his goods, transportation, rents, clerk-hire and the various expenses incident to his business, and credits sales. The manufacturer makes the proper entries regarding investments in buildings, machinery, raw materials, labor, repairs, &c. &c., and the merchant regarding the cost of his ships, outfits, labor, insurance, &c., and both credit the returns yielded, and the ledger will show, beyond a peradventure, whether the business be profitable or not. Now such a system of accounts is what is needed by the farmer, in order that he may be able to determine with a good degree of certainty, what his crops and other products cost, and whether they yield a profit or not, when sold.

On the one side should be placed the cost, or a fair valuation of, lands, buildings, implements, animals, manures, labor, (not less that of the wife in the dairy, of the boys in dropping corn, &c., than one's own labor in the field, or that of the "hired help,") and all the other items of expense which go to make up the cost of what is produced. On the other hand, should be credited at a fair price, the value of *all the products* and *results* —hay, grains, roots, dairy products, increase of stock in number or value, the enhanced value of the farm by better fencing, deeper ploughing, higher cultivation and manuring, by underdraining, by reclaiming of waste or swamp lands, or in any other way.

Thus, and thus only, can a farmer determine with certainty, either the general results of his operations or the cost of particular crops, and products; but to do it requires labor and care, and many may say, they have no idea of going into book-keeping in order to determine whether farming be profitable or not; they are content to know that they get a good living without it, and as for what they sell, it will bring just as much and no more, than if they knew exactly what it cost. But is nothing more than an answer to the question, whether farming be profitable or not, to be thus obtained? Let us see; for I feel confident that the ends to be thus obtained, are of sufficient magnitude to warrant all the labor and cost. Certainly, agriculture can never be elevated to the position of a business, properly so called, and command capital and confidence, until it be done; and until then, it must drag along, as it now does, with slow progress, its results being matters of conjecture, about which there can be no settled conviction. But such system, and especially if connected with a record of experience, as it should be, will reveal much which has a direct bearing on the interests of each individual farmer.

In order to success, each should *know what product will command the highest price, relatively to the cost of production.*

We know that men are not similarly endowed with natural ability, or acquired skill. Soils vary in their capabilities. markets may be near or remote. These and similar considerations all have their bearings on each case, and no one can understand the matter fully, without making a business of it—introducing system and order; without it, one may not even know that he is earning fair wages, to say nothing about profit, and so might be better off to sell his labor to others, instead of using it himself, and so save all care and anxiety.

It must by no means be forgotten, that so long as the farmer can obtain the cost of his products only, he has no reason to be discouraged, because he can live comfortably upon the wages which is a part of the cost; but if his products cost more than they will bring in market, it is time to cast about and ascertain the cause, and in doing this, it is highly probable, that much may be developed hitherto unsuspected. For instance, he may find that one acre of corn, yielding thirty bushels, costs a dollar per bushel, while another upon which more has been expended in manuring and deeper tillage, yields sixty bushels, at a cost of only seventy-five cents per bushel; or he may find that his crops or his mode of cultivation are not those best adapted to the kind of soil—or that being remote from market, he has hitherto lost a large proportion of the price obtained, in expenses of transportation, and so might do better to turn his hay, grain, or roots, into beef, pork, or mutton, and thus save much. He may find that his implements are not so good as those of others, who can afford to sell cheaper—or his manures too scanty in quantity, or deficient in quality. He may find a thousand leakages which need to be stopped, and not unlikely that a radical change of policy may be required, as from tillage to grazing, or vice versa, as a main and leading object. Not only has each section of country its natural advantages or disadvantages, as soil, climate, proximity or remoteness of market, but so likewise has each farm in a greater or less degree, and true policy dictates that the advantages should be so followed up as to secure the best possible returns for labor, skill, and capital invested.

As division of labor in other departments of industry greatly enhances profits, and is often the sole dependence for success, why may it not be so with agriculture? The man who has an intelligent insight into his affairs through accurate accounts, may see clearly, that if his means, skill, and energy, were concentrated on one main branch, he could more thoroughly understand, and more profitably conduct it.

What is urged in this connection, is not mere matter of theory. In other pursuits it has been abundantly demonstrated in practice, nor is it without illustration in some instances among us in agricultural operations. It has been said that retired merchants, sea captains and military men, make the best of farmers. Whether this be just so or not, observation will convince any one, that a great majority of the men, who, to-day, are not only elevating and ennobling the profession of agriculture, but actually are the most successful in a pecuniary point of view, are men who were either bred in the counting room, or elsewhere have acquired habits of exactness, accuracy and method, and that their success is in a great degree owing to their possession and use.

It may be thought that undue stress has been laid on this as a prominent want of agriculture, and perhaps it is over estimated, but our conviction is strong that if it be supplied, not only will other wants present themselves in so doing, but ways and means will some how or other be devised to supply them, and that rapid improvement will ensue.

The next broad and comprehensive want to which attention is called, is *the application of scientific principles to the practice of agriculture.*

It has already been remarked, that in order to insure success, the farmer should be able to determine with certainty what product *will command the highest price relatively to the cost* at which he can produce the same and put it into market. It is equally necessary that he ascertain by what means the *cost of production can be reduced to the lowest point,* in order to increase the net profits. To do this, we must question science, and apply her teachings to practice. The *art* of agriculture is as old as Adam,* but as such, it has not yet, and can never attain a high degree of perfection until it is pursued by the light which science affords, or can be made to afford.

To understand the practice of agriculture thoroughly, that is, to know *how* to work, to plough, to hoe, to plant, to dig, &c., is exceedingly desirable, and by no means to be dispensed with; but to know exactly *why* each is to be done, so as to apply labor to the best possible advantage, is a much greater accomplishment. By scientific agriculture is understood, practice based on such knowledge—nothing more and nothing less; but to understand fully the why and the wherefore of everything to be done on a farm, is to know a great deal. Without the aid of chemistry and geology we cannot know the character and capabilities of soils, nor without that of physiology, can we understand the requirements of plants and animals, so as to secure their most perfect development; and so on through the whole list. Agricultural science is, therefore, an exceedingly broad and comprehensive term, embracing so much of the various sciences as have a bearing on its practice.

The opinion is sometimes expressed, that education is more necessary for other pursuits than for that of agriculture; as an

---

*It has often been said that agriculture was the divinely appointed employment of man in Paradise, which is probably an error. Before the fall, earth yielded spontaneously and abundantly all which man needed,—he had but to pluck and eat. Man lived in communion with and enjoyment of the Creator. To furnish the exercise needful to the most perfect development of intellectual and physical strength, he was directed "to dress and to keep" the garden. Horticulture, therefore, rather than agriculture, and in its most delightful aspect, too, was his occupation. After the fall, man being estranged from his Maker, and those powers of mind before occupied in the study and enjoyment of Infinite Good, being depraved, it was necessary for his recovery that he be placed under entirely different circumstances; and *for his sake*, that is, for his good, as an indispensable check to his depravity, he was compelled to earn his bread by the sweat of his brow—in the pursuit of agriculture—by wresting from the now unwilling earth, the means of sustenance. There is a deal of truth in the nursery rhyme:

"For Satan finds some mischief still, for idle hands to do,"

and in the history of Sodom, do we see the development of "fullness of bread and abundance of idleness."

old farmer once said, "lawyering and doctoring come by learning, but farming comes by nature," and it is triumphantly asked, "can a boy turn a better furrow or lift a bigger stone for going through college?" Perhaps not, and yet unless effort be directed by mind, as well as muscle, it is a needlessly up hill work. A boy grown on a farm might, by the time he is of age, be able to practice the craft even without more of education than an ox gets; but he would be a mere operator, a living machine, traveling the round of work as taught, but incapable of improving modes of operation, or of varying them advantageously to suit different circumstances, and understanding nothing of their theory, or of the principles upon which they are based.

Tradition says that formerly, when the bag of grain was carried to mill on the horse's back, it was balanced by the addition of a stone of equal weight. The light of science dawned on the mind of him who discovered an equally effectual mode of accomplishing the desired end without such addition; and such discoveries, in all the varied departments which have a bearing upon the subject of agriculture, will supply the want now under consideration.

The application of science to agriculture is of comparatively recent date. In the past it has groped in the dark, or hobbled along by guess, but some progress has been made in this direction, and it is gratifying to believe that at no time have so many minds been busy in the field, the workshop, and the laboratory, to discover the laws of nature and their relations and bearings on the arts of cultivation, so that they may be made available in practice, as at the present.

The researches of the geologist, by revealing the origin and nature of soils, and of the chemist, by discovering the component ingredients of soils, manures, plants and animals, and their mutual relations to, and combinations with, one another, and by showing somewhat of the laws which govern the silent and otherwise unobserved processes of nature which result in growth and health, or the lack of them—in other words, in profit or loss—have made contributions of great value.

Agricultural chemistry is as yet in its infancy, yet from its very beginning, efforts have been made to determine from the result of chemical analyses of soils, the degree of their fertility, and of their adaptation to any given crop. Probably, upon no subject connected with agriculture, is there greater diversity of opinion among intelligent cultivators, than upon the value of such analyses; some extolling them as indispensible and reliable, while others decry them as uncertain and useless. The truth probably lies between. It cannot be doubted that in numerous instances, barrenness can be clearly traced by means of analysis to the absence of some needful element, and a cheap and easy remedy thus indicated, to illustrate which we quote the following from an address of Hon. M. P. Wilder: "We have been favored by a gentleman of large attainments and celebrity in the various departments of science, with the results of the analysis of the soils of more than one hundred farms in the State of New Jersey. Some of these may not be uninteresting, as felicitous illustrations of the advantages of science applied to agriculture. He analysed the soil of a field for J. J. Scofield, on which he desired to raise ruta bagas. It was found deficient of the following constituents of that crop, viz: phosphate of lime, potash, organic substances, including a slight quantity of animal or nitrogenous matter; these being supplied, the result was fourteen hundred bushels to the acre, as per certificate to the Legislature. He also analyzed the soil of a field for Dr. John Woodhull, which he had appropriated to the growth of wheat, and from which he obtained on the preceding year, less than fifteen bushels to the acre. After supplying the deficient constituents, he obtained the succeeding year, fifty-seven bushels to the acre. Another instance was on the farm of Robert Rennie, certified to, before the committee of the Legislature, showing the great advantage of subsoiling and thorough cultivation. It was discovered by chemical analysis, that the surface soil was deficient in constituents which abounded in the subsoil. He prescribed subsoiling, and a thorough mixture of the upper and lower soils. Some gentlemen who came to witness the operation, went away in disgust at the great depth of the ploughing; but the success of the experiment at length changed their disgust into admiration. The preceding crops, were fifteen bushels of corn, and sixty bushels of potatoes; but the succeeding, one hundred and sixty bushels of *ears* of corn, and three hundred and fifty bushels of potatoes. Such facts have been obtained by other scientific men, both in America and in Europe. They might be multiplied indefinitely. We have space for only one more. A gentleman in Maryland, whose cornfield appeared to be in the last stages of consumption, yielding less than one bushel to the acre, applied to a distinguished chemist, who, upon an analysis of the soil, discovered that it contained sufficient lime, potash, magnesia, and organic matter, duly mixed with alumina and sand. One requisite for fertility, only, was wanting. This was phosphoric acid, which was supplied at an expense of ten dollars per acre, and the result was a crop of twenty-nine bushels of wheat to the acre."

Thus, it is seen how science has operated to direct practice to successful ends, through economical channels. In the last named instance, instead of expending ten dollars intelligently, to render his field above average fertility, he might have expended a hundred *by guess*, without accomplishing his object.

On the other hand, it is also true, that there have been instances in which practice based on the results of chemical analysis has failed to give satisfaction, and it is not difficult to conceive reasons plenty as blackberries, how this might come to pass, without any blame whatever being justly chargeable as the fault of chemical science. As was above remarked, agricultural chemistry is itself, as yet, in its infancy, nor is it difficult to suppose that its professors, even when acting fully up to the light they possess, may not always have been so delicate and successful in their manipulations as to detect minute, yet very efficient quantities of elements in their analysis; for instance, a quantity of phosphoric acid, or of potash, equal to a tenth of one per cent., or one grain in a thousand in a soil, will amply suffice to meet the demands of growing plants for these elements for many generations, and yet it is very possible that a one thousanth part of a soil might escape recognition; but admitting the analysis to be perfect, still it is true that there are many circumstances to affect the fertility of a soil, entirely independent of its chemical composition. A soil may even contain all the needful elements of fertility, and in the best possible proportion, and yet be barren. Either *saturation with,* or deprivation of, water, will prevent production in the most fertile soil. So, too, the mechanical condition of a soil may be such that every rootlet readily finds its appropriate food, and so the plants thrive to perfection; or it may be such that, though capable of being brought to light by the action of chemical reagents, they may be, for all practical purposes, locked up from the little rootlets, utterly unavailable, and so the plants starve. A proper combination of elements in a soil is but one among other necessary conditions of fertility.

This subject is so fairly and ably treated in a paper, by Dr. JOHN D. EASTER, in the transactions of the United States Agricultural Society, that no apology is deemed necessary for its insertion here:

"I propose, in this paper, to consider the true use of chemical analysis of soils, and some of the requisites of a valuable analysis.

As it is from the soil that plants derive the principal part of their constituent elements, the presence in the soil of these elements, in forms in which they may be absorbed by the rootlets of the plants and assimilated in their cells, is indispensable to their perfect growth. Where the want of fertility arises from the absence of one or more of these constituents, or to their being locked up in combinations in which plants cannot use them, chemical analysis is perfectly competent to detect the cause of the evil and point out its remedy.

But the growth of plants is influenced by a multitude of other circumstances to which chemical analysis can furnish no clue. A soil may abound in all the elements of a very fertile one, and yet be perfectly barren. The soil of the great Colorado desert in California, which I have recently analysed, furnishes a good example of this. It possesses in abundance every element necessary to extreme fertility, but it is entirely barren from the want of water.

The reverse of this also frequently occurs. The chemist receives a specimen of soil, in the chemical constitution of which he can detect no deficiency, and in his laboratory, he can assign no cause for its alleged unproductivenes. An examination of the locality probably shows him that it is underlaid by a stiff tenacious subsoil, which retains an excess of water, and no provision has been made for drainage.

The difference in the mechanical texture of stiff and loose soils is familiar to every one. The fertility of many stiff clays may be seriously impaired by ploughing too wet, rendering them tough and impenetrable to the tender rootlets of plants. In this case, as no chemical change takes place, the chemist in his laboratory would seek in vain for the cause of the difficulty.

Every attempt to improve the character of a soil must therefore be preceded by a judicious consideration of its mechanical texture, its power of absorbing and retaining water, and its capacity for heat. Hence it is important that the agricultural chemist should, if possible, himself examine the locality, in order fully to estimate the wants of the soil. The employment by every State of an agricultural chemist, who should visit in person every part of the State, is therefore strongly to be recommended.

In the next place, it is requisite that an analysis of the soil, in order to be of much value, should be thorough. It must include separate estimations of the parts soluble in water and in acids, and the insoluble portion. For the portion soluble in water represents what is available for the wants of the growing crop, while the portion soluble in dilute acids, is the index of what may by decomposition become the food of plants. This undecomposed portion of the soil may often, by the application of lime, ashes, and other caustic manures, be more speedily decomposed and rendered available.

The analysis should include also, if possible, the sub-soil as well as the surface soil, in order to guide the farmer in the process of deepening his soil. There are, of late, many advocates of indiscriminate deep ploughing. But a fertile soil may be underlaid by a barren subsoil, by throwing up large quantities of which, the fertility of a field may be destroyed for years. The subsoil, not unfrequently, contains large quantities of protoxide of iron and other substances which are not injurious to vegetation until they have been subjected to the action of the atmosphere. On the other hand the sub-soil often contains elements of fertility which are not so abundant in the surface soil, in which case deep ploughing will improve both. It is important that the agriculturist should know these differences, in order that he may know where he should plough deep, and where refrain.

A still more important consideration is, that no analysis can be of any value to the farmer who is not himself a chemist, unless it be accompanied by a discussion of the indications it affords, and a recommendation of suitable means of improvement. Our agricultural journals and reports abound in analyses which are about as intelligible to the unscientific farmer as the inscriptions on the pyramids, or a chapter from La Place's *Mechanique Celeste*. Most of our intelligent farmers know, that lime, phosphoric acid, and the alkalies, play important parts in the economy of vegetation, but few of them have any idea how much of these valuable ingredients is requisite to fertility, or what are the best means of supplying their deficiency. Until every farmer is also a chemist, an analysis of a soil or manure which is not followed by a commentary on its defects or virtues, leaves him just where the diagnosis of a disease, without a prescription for its relief, leaves the patient. He is no wiser nor better off than before. It will not do to presume that when the chemist pronounces what a soil contains, the agriculturist will know what it *ought* to contain, and how to supply its wants. Every farmer should insist upon an interpretation of the analysis furnished him by the chemist.

In conclusion, I would draw your attention to the duty of the intelligent agriculturist to acquire a theoretical knowledge of so much of chemistry as relates to his profession, that he may be enabled to judge for himself of the value of a substance from the chemical analysis of it, and also of the probable value of the analysis itself, for at least one half of the analyses which farmers daily pay for are totally unreliable and worthless. The agriculturist should also be able to judge for himself of the texture, moisture and color of the soil, and the means within his reach for modifying them. At the same time, I would by no means advise that he should attempt to become a practical chemist and do his own chemical analysis, as some persons of more zeal than judgment insist he may. I have pointed out the necessity for thoroughness in chemical examinations of the soil, and every one who has had only a few months' experience in a laboratory knows that a thorough analysis of a soil requires much time, great care and dexterity in manipulation, and a knowledge of all the disturbing influences and sources of error. This few farmers have the time or opportunity to acquire, and few would, for the sake of making the few chemical examinations they might in their lifetime require, be willing to devote to the study, time which might be so much better spent in acquiring a practical knowledge of their own noble profession. Besides this, the expense of fitting up a laboratory would more than pay for all the analyses any farmer is likely ever to need. The many formulas which have been proposed for the use of farmers are therefore of very doubtful utility. Let every farmer make a laboratory of his barn yard, and carefully collect and employ all the liquid as well as solid manures within his reach, and if the chemist is not enriched thereby, his field will be."

It is not the chemist and geologist alone, who have done good service to the farmer. The entomologist, by researches into the history and habits of insects injurious to vegetation, and the means of obviating or lessening their ravages; the physiologist, by observing, arranging and systematizing the phenomena attendant upon vital action, and deducing therefrom useful lessons—for it should be borne in mind that the operations of nature are synthetical, rather than analytical, and in order to promote growth and health, we should understand the necessary conditions—have both made valuable contributions to agriculture. So, too, has natural philosophy been questioned to some purpose, and the application of its teachings by the scientific mechanic, has resulted in the improved implements of husbandry which we now see in use. Compare the plough of today, with that of fifty or a hundred years ago, and how utterly unlike do we find them. Thorough work is now done with ease, where before, with greater labor, the ground was little better than torn or scratched. If it be asked whence comes the difference? the answer is obvious. By careful study into the laws of motion, and of mechanical forces, with a thorough testing of the strength of materials; in other words, by the application of science; and this is an instance not to be winked out of sight, or objected to as visionary theory, or book farming. It is one readily appreciable by every farmer, and its value is capable of estimation as a matter of dollars and cents; and yet the plough of to-day, had to work its way into use by slow degrees, against strong opposition and prejudice, many for a long time declaring that so much iron made it too heavy—it was liable to break, and to rust, that although it might answer in some particular cases, it would never succeed generally, and that altogether "the old was better."

Greater progress has been made in scientific agriculture in England, than any where else, and we have the following testimony from an unimpeachable witness as to results: "Upon lands cultivated under the *new methods*, the average return amounts to forty-four bushels per acre of wheat, fifty-five bushels per acre of barley, and sixty-six bushels per acre of oats," and we are told that the average yield of wheat, under all methods throughout the United Kingdom, is twenty-eight bushels per acre. When we compare European agriculture with our own, it should be always borne in mind, that they cultivate *old land*, very old, cropped perhaps for a thousand years, perhaps for more, for they have not our opportunity, after plundering the soil of its elements of fertility, by cropping freely, and making stingy returns or none at all, to run away and repeat the same process upon the virgin soil of the great West, and tell what a good state Maine is to emigrate from. Nor will we and our children always be able to pursue this practice. It is an undoubted fact, that a large portion of the soil of the United States, is in process of rapid deterioration in its powers of production, and something must be done, sometime, or somehow, to check it, or famine will stare us in the face. Besides, there is no need of it. We do not say that the modes of cultivation found best in England, may precisely suit our case, but we do say, that our soil and climate and all our facilities for production, are as good as theirs, and what has been done there, can be done here. Question science carefully, apply her teachings to practice faithfully, and our farms may increase steadily in productiveness so long as the world stands,—the maximum yield of an acre is not known yet, nor even scarcely dreamed of.

The fact is, the sweat of the brow is not the only requisite to good farming. The sweat of the brain is fully as productive. Not that science is ever to be a substitute for hard work, but let the hard work accomplish the greatest results. The question is, will we strive to understand, and work in accordance with, scientific principles, and so easily compass our desires, or against them, and spend the sweat of the brow to little purpose?

Present condition and prospects of agriculture in Maine.

In order to do justice to this subject, the indispensable necessity of full and accurate agricultural statistics is perfectly obvious at a glance. As almost nothing of the kind is in existence, and with a view to obtain as the most available substitute therefor, the matured opinions, and results of observation of our best farmers, the following circular was sent to all the towns in the State, in the hope of thus securing what might afford a more reliable view of the agriculture of Maine than could otherwise be had:

Board of Agriculture,
Secretary's Office, May 28, 1856.

Dear Sir:—I desire to obtain from each town in the State, such facts and statistics as will enable me to make a reliable statement of the present condition of our Agriculture, and therefore earnestly and respectfully solicit your aid. If not able to attend to the matter personally, will you place this circular in the hands of some intelligent and observing man who can and will do the cause of agricultural improvement the service to answer the questions below, and to submit any observations or suggestions which may be of value.

All favors in this matter will be gratefully acknowledged.

1. To what branch of Agriculture is your town naturally best adapted? The production of tilled crops, grazing, stock-growing, &c.
2. What are the principal crops grown in your town?
3. What are the chief products *sold from* the farms of your town?
4. Are the farmers of your town devoting special attention to any particular branch of farming as a leading object, or pursuing a mixed method of husbandry?
5. Does your town raise its own supply of breadstuffs—and if there be any surplus please state of what it consists, and the amount.
6. Is the cultivation of wheat increasing or diminishing?
7. What are the hindrances to its more extended cultivation?
8. Has winter wheat been cultivated, and with what success?
9. Is the cultivation of Indian corn increasing or diminishing?

10. In what estimation is it held as a crop for general cultivation, and how does it compare with other crops?

11. To what extent, and with what results are improved implements and methods of husbandry introduced among your farmers?

12. What is the estimated average yield of Indian corn and grains per acre, and is this average generally increasing or diminishing?

13. Is the number of acres under tillage increasing or diminishing?

14. Is the quantity of wood-land increasing or diminishing?

15. Have swamp or meadow-lands been reclaimed, and if so, to what extent, at what cost, and with what results?

16. Are rutabagas, carrots, beets, &c., cultivated as field crops for stock, and if so, what is the average yield per acre of each, and their estimated value compared with English hay?

17. Are any special means adopted to increase the quantity or improve the quality of manures produced on the farms, and if so, what and how?

18. Are stable manures generally composted or used in a crude state, and which is deemed best?

19. What per cent. increase in value of manures might be saved or made on your farms by reasonable care, and by what means?

20. Does swamp muck or peat abound with you, and has it been extensively used? If so, how and with what effect?

21. Have guano, super phosphate of lime, poudrette, or plaster been fairly tried, and if so, what is the result of experience as to their value or economy compared with other manures?

22. Is any special attention given to raising improved breeds of domestic animals? If so, what of each variety is most highly esteemed?

23. What are the best breeds of sheep, and their value per head?

24. What breeds of swine are most highly esteemed, and can pork be grown at a profit?

25. What attention is paid to the cultivation of fruit? Is it profitable compared with other crops, and what varieties are most esteemed?

26. What is the estimated value of apples for stock, either for flesh or milk, or of cooked apples for swine.

27. Has underdraining been much practiced with you, and if so, in what manner, at what cost, and with what results?

28. Has any attention been paid to the cultivation of the cranberry, and with what results?

29. If lumbering is extensively carried on in your vicinity, please state its influence on agriculture.

30. What number of persons or families engaged in agricultural pur-

suits have emigrated from your town since A. D. 1850? Why did they go, and where have they gone?

You will greatly oblige me by answering as fully as possible, and returning the reply to me at Saco, before the first of August.

Very respectfully, your obedient servant,

S. L. GOODALE,

Secretary of the Board of Agriculture.

From the replies which have been received, and for which I take this opportunity of tendering to all who have responded to it, my grateful acknowledgments, together with such other sources of information as have been at command, and from personal observation, the attempt is made to give as accurate an idea of the present condition and prospects of our agriculture, as the means admit; and to present it as nearly as convenient in the order of the questions, grouping together such as are related.

It may be well here to say, that although replies were received from all sections of the State, and in considerable numbers, too many towns were not heard from, to warrant the assumption that they *certainly* give a correct view, yet it may be fair to presume that they make a near approach to it.

First, as to the adaptation of the soil of Maine, to varied farming purposes. Of the towns which respond to this inquiry, thirteen per cent. say, "best adapted to tillage;" thirty-two per cent. say, "equally adapted to tillage, grazing and stock-growing." A few say, "best for fruit," and other few, "better for sheep husbandry;" while forty per cent. answer, "best for grazing and stock-growing." The replies, as a whole, give the impression strongly, that of the leading branches of agriculture, a very large proportion of our soil is as well, or better adapted to the growth and sustenance of cattle, for the various uses to which they are subservient—for the dairy, for labor, for beef, &c., than to any other; and this impression accords with that received from other sources. But if we admit its correctness, a dilemma arises, for when we examine the replies to the query as to the *chief products sold from* the farm, cattle and beef, butter and cheese, although mentioned in many cases, do not receive the prominence, even in the towns declared best for grazing and stock growing, which would naturally be expected. Nor do we find elsewhere, evidence that this is so prominent a pursuit as our facilities warrant. Very few cattle, very little beef, butter or cheese are *exported* from the State; so far from this, dairy products (particularly cheese) are *imported*, and beef has been sold in our shambles the present year, from cattle brought a thousand miles by railroad, (from Ohio) and slaughtered here! What shall we think, then? Are the replies incorrect, and is Maine really so ill adapted to these products, that we can afford to grow something else, wherewith to pay a tariff, or an advance upon the cost of production elsewhere, equal to the price of five hundred or one thousand miles of transportation added to the profits of those who traffic in them? Is it because our means of transportation are so poor that we cannot afford to carry such heavy or bulky articles from the interior where produced, to our seaboard or principal markets? Can it be because the efforts of our farmers are not directed in the most judicious and profitable direction? Can it be because the production of these is attended with too much exhaustion of the natural resources and fertility of the farm, and so we cannot afford it?—cannot afford to retain all the manure yielded as a side product on the land?

I propose no solution to these queries, hoping that the bare mention of the facts, as they seem to be, may prove sufficiently suggestive, to excite inquiry enough to enable all interested to decide, each for himself, and to profit by his conclusions.

I would by no means be understood as alleging that stock-growing, dairy-husbandry, and the like, do not, at the present time, consitute a principal branch of our agriculture; for such would not be in accordance with the facts in the case; but wish rather, to direct attention to the inquiry, whether, with our facilities as a State, we should not *export largely*, rather than import at all, except it be choice animals for purposes of improvement in breed. Indeed, the simple fact that our hay crop, with only the attention now given, must probably amount (taking the census returns of 1850, as a basis of calculation,) to not less than 900.000 tons,* which at a low estimate is worth, where it is stored, seven to eight millions of dollars, and which is nearly as much as all our other cultivated crops amount to, coupled with the fact, that with due care and attention, it might easily be doubled, if not trebled, shows at once, both its present importance, and what it is capable of being made.

To the above suggestions are here appended several statements received from various individuals, as to the soils and adaptation of their respective localities:

FROM JAMES M. SHAW.

"The surface of the town of Waterford is undulating, and in parts, hilly and mountainous. Its area is fifty square miles, or 31,775 acres. It contains several ponds, the area of which is 1,784 acres. The soil is mostly gravelly loam, formed from the detritus of granite rocks; a small portion of sandy plain, and a few patches of bog or meadow land. The soil is generally deep and productive, and well adapted to tillage crops and grazing."

FROM ASA CHARLES.

"The soil of Fryeburg is well adapted to most of the cultivated crops raised in the State. In addition to the hay crop from cultivated land, it has a large extent of natural or fresh meadow lands, yielding a great quantity of very passable feed for stock in winter. It can, therefore, successfully compete with any town in this vicinity, in winter feeding of stock; but it has no pasturage, and can have none, without taking for this purpose lands best adapted to cultivated crops. We have, therefore, to seek pasturage out of town—a material drawback on stock-raising." †

---

* The hay crop of Maine in 1849, according to the Census Report, was 755,889 tons; wheat 296,259 bushels; rye, 102,916 bushels; oats, 2,181,037 bushels; indian corn, 1,750,056 bushels; potatoes, 3,436,040 bushels; barley, 132,731 bushels; buckwheat, 104,523 bushels; hops, 40,120 lbs.; butter, 9,243,811 lbs.; cheese, 2,434,454 lbs.; peas and beans, 205,541 bushels; produce of market gardens, $122,387; orchard produce, $342,865; beeswax and honey, 189,618 lbs. Whoever will estimate the value of these, will see that the hay crop about equals all the rest in value.

† Having mountain land in abundance in the immediate vicinity, which must be cheap, the suggestion is offered whether the circumstances of the people in this town do not indicate that they may make stock-growing all the more profitable, by the adoption of a judicious system of management? Is it not the true policy to have a mountain pasture for young stock, and then adopt a short term of pasturage for horses, working oxen and cows, as one part of a system of rotation on their cultivated lands? In this way, may they not raise stock cheaper than others in different circumstances?

FROM SAMUEL F. PERLEY.

"The town of Naples is naturally best adapted to stock-growing, and fruit culture. The formation is granitic. The surface is considerably broken by moderate elevations, somewhat rocky, and abundantly supplied with springs of pure water. Brooks and ponds abound, with a great variety of soil, from the tough blue clay to the clean pond sand."

FROM WILLIAM R. FLINT.

"The town of Anson is adapted to the varied purposes of farming in this climate. It has a great variety of soil, so that hardly two farms, or two parts of the same farm, are alike. The alluvial banks of the rivers and streams of water, which annually overflow their banks, are best for grazing, and the next best are the deep-soiled rolling hills, with occasionally a rounded granite stone and an inclined surface, say from four to twenty-six degrees. It has no extensive bogs or mountains, so that not one lot of 150 acres is to be found that will not make a decently good farm for tillage, say from thirty to one hundred acres."

FROM WILLIAM BUXTON.

"North Yarmouth is now an inland town, cut off from the sea by the town of Yarmouth. It has a territory of about eleven thousand acres. The land is good, and adapted to all branches of agriculture—the growth of hay, corn, and all the necessaries of life. For the most part it is well tilled, and the owners are richly paid for their labor. Some of the land on the banks of Royal's river is as good as any in the State. Wheat does well generally. Grazing and stock-growing is a secondary object with the farmers generally."

Method of Husbandry.

In reply to the second question, as to the principal crops grown, the answers generally give a list embracing most of the crops usually grown in the State. In some instances, prominence is given to one or more, as hay, or near the larger towns, market vegetables; and exactly correspond to the answers to the fourth, relating to the method of husbandry, and whether the farmers devote special attention to any one branch. In some towns special attention is, to some extent, given to a particular crop or product; but more than ninety per cent. of the replies say, that a mixed method prevails; or as one has it, "a mixed method, or more properly, no method;" or as another practical farmer writes, from one of the best towns in the State, "mixed farming to all intents and purposes. There is not a stock raiser in town, though all raise stock. There is not a respectable dairy in town, though all make butter and cheese. There may be a flock of one hundred sheep, but twenty-five is not far from an average flock,—a few lambs are annually sold, occasionally a fine horse, (or perchance, not so fine) or a yoke of oxen, or a cow or heifer for the shambles; and for a few years past, until this year, most of the calves to the butchers—price of calves, at four weeks old, say four dollars. Dry seasons had contributed with high prices to prompt the sale of calves, until it was found that all kinds of stock had become scarce and high, and our farmers not being able to purchase of one another, have, this year, raised every thing, big and little." From this same town, we learn that its soil is best adapted to "mowing, grazing, forest, tillage and orcharding, and in quantity in the order as above;" so that it may be fairly presumed, that stock-growing, dairy-husbandry, or the like, *might* profitably be made a prominent pursuit. We farther learn, that the *principal* crops grown, are "corn, wheat, potatoes, oats, barley, beans, peas, buckwheat, *&c.*, in value in the order named as above;" and that "there is *no one prominent* product sold from the farms of this town, but a little from all of these; also, fruit, eggs, wood, hay and stock, but most of these in limited quantities."

It is no part of our task to find fault with any, for pursuing such method as they see fit to do. Every one is at perfect liberty to follow any occupation or profession which he pleases; and also, to follow it in any way he pleases, or he may combine as many as he pleases. Suppose one to practice law, physic and divinity, and when leisure serves, attempt to model ships and machinery, and to manufacture cloth and paper, no one could object, yet it may be fairly questioned, whether by such policy, he would be so likely to attain eminence or wealth, as by selecting one, and devoting himself to it; and it is respectfully submitted, whether, with adaptation of soil as above given, (and this reply is selected for no other reason, than because it is more distinct and definite than some others, and not because it is different in kind from most,) whether a better return might not be something in the following style: For principal crops grown—hay, wheat enough for bread, corn, ditto, and some for fattening swine, and roots for winter feeding to cattle. And for chief products *sold from* the farms, cattle and sheep, or horses, (or beef, mutton and wool) butter, cheese and pork, the latter grown on buttermilk and whey, with refuse vegetables, &c., and fattened on corn; and it is also submitted, whether in all probability such practice would not result in greatly increased profits.

Some general remarks upon this subject were made in a former part of this report, when speaking of the pursuit of agriculture *as a business*; and so it is unnecessary to repeat them here. While our conviction is strong, that we follow altogether too mixed a method, violent or sudden changes are not recommended, but only as fast and as far as may, upon due reflection, seem both warranted and demanded by the best interests of each individual farmer. In some cases no change may be advisable. Within the limits of our State, there may be those now situated so similarly to what all were when this mixed method began to obtain, when with poor roads, with little money to buy with, with no markets to sell in, the question for each to consider was, not—what can I and my farm produce to best advantage, so much as, how can I best obtain from off my farm the means of subsistence—food and raiment and taxes; and so it was expedient to pursue a method which would produce as many of the necessaries and comforts of life as possible, and whatever there was of surplus went to pay the mechanic or the professional man in kind. Flax was grown for summer wear, and wool for winter, the goodwife spun and wove and made into garments, for she could not, as now, exchange a pound of butter for a yard of cloth, which it would cost her several times the time and labor to produce at home. But time has made wonderful changes—and may it not be well to ask if our policy is as well adapted to our circumstances, as theirs was to theirs? It may now be expedient to inquire, to what product are my farm and my taste and ability best suited, so that I can pursue it with both pleasure and profit? Many farms have quite a range of capabilities, and in such, natural aptitude or local demand for any particular products, and various other considerations may help decide. Nature may have marked the land most distinctly for tillage; and if so, follow the plough, and thrive. She may have as plainly marked it as grazing land, and its owner may possess a natural aptitude for the proper care and treatment of cattle—he may have a peculiar gift in the discrimination of those points which go to make up excellence, so that by judicious crosses, his cattle may be constantly improving for the yoke, for the dairy, or for beef. Let him also, follow the indications of nature, and thrift shall follow him.

Supply of breadstuffs.

In regard to the supply of breadstuffs grown in the State, some towns report a small surplus; some say, "about enough," or "enough of all except wheat," but the majority reply that a sufficiency is not grown for home consumption. The deficiency, however, seems to be mainly confined to the article of wheat. The culture of wheat seems to have received widely varying degrees of attention at different periods. The law granting a bounty on its production seems to have given a strong impulse to its culture, which, however, was not permanent. The census returns of 1840 state the crop that year at 848,166 bushels, while that of 1850 is placed at only 296,259, which latter, though not a favorable year, is probably an under-statement, although we find by the same returns that the amount grown in all the New England States was greatly diminished, the crop in Massachusetts in 1850 being only about one-fifth of that of 1840.

The obstacles to be encountered in its growth here, are probably not materially different in kind or degree, from what is experienced in the other New England States. Some portions of our soil seem to be as well adapted to this crop as any elsewhere; particularly is this true of what is known as the Aroostook country. In a report by Dr. E. Holmes, of an agricultural survey of this territory, made in 1838, under the direction of the Board of Internal Improvements, he says, "The staple crop of the Aroostook farms is, and must ever be, wheat. For this the climate and most of the soil is exceedingly favorable." "I regret that I am not able to give more accurate statistical information upon this and the other crops, such as the exact amount of increase per bushel sown, exact amount of crop to the acre, expense per acre of cultivating, &c. The great want of exactness in their operations, of which farmers almost everywhere are guilty, prevails among the farmers here. Scarcely any one of them can tell the precise amount of ground cultivated, quantity of seed sown or bushels harvested. Their answers to questions upon the subject amount to general estimates. The provision in the late law, granting a bounty on wheat and corn, and requiring the applicants to make oath to the amount of seed sown, acres cultivated and bushels havested, will remedy this trouble in regard to these crops, but as the wheat was not threshed when I was there, I must refer you to such returns as may be made to the Legislature. The appearance of the fields during the summer, and the good quality of the grain harvested in the fall, would convince the most faithless that this is naturally a great wheat country. I have been informed that Mr. Lewis cultivated in No. 7, on the Aroostook road, eighty acres of wheat, and gathered sixteen hundred bushels. I cannot vouch for the truth of this, as I did not see Mr. Lewis, he not being at home when I was there. This, however, is but one instance of the many that can be cited, of the success attending the cultivation of this golden crop. In 1837, Fish & Wiggins raised in township No. 4, on the Aroostook road, twelve hundred and fifty bushels of wheat on fifty acres of burnt land, averaging, as you will see, twenty-five bushels to the acre. In 1838 they raised in the same township seven hundred and fifty bushels. Mr. Lewis, who that year resided in the same township, raised seven hundred and fifty bushels. In 1837 there were raised in this township six thousand bushels of first-rate wheat, which made an average of nearly three hundred bushels to a family. The spring was very favorable for getting good burns, and the summer was favorable for the wheat crop. In 1838 they raised but about three thousand bushels, owing to the extremely wet spring, which prevented their getting burns soon enough to enable them to sow sufficiently early." "The first tree was cut in this settlement in 1834."

I have no data from which to state the production there since this period, but no doubt is entertained that it has been large, and no reason is known why it may not prove the granary of the state.

The hindrances to its more general cultivation throughout the state are variously stated. Of the number of towns from which answers to the circular were received, twenty-five per cent. mention "insects;" twenty per cent., "insects and rust;" two say, "poor soil," one, "lack of lime," another, "fishing, coasting, and pogy catching!" another, "lumbering;" a few say, "can't compete with the south and west, can buy cheaper;" some, "that the soil is too wet at proper time to sow," (remedy for this, under-draining,) while from a third to two-fifths reply, "nothing," or "nothing in the soil or climate," "nothing but lack of energy, or lack of attention and enterprise."

There is evidence that this crop is receiving greater attention than for some years past; on this point some reply, "more than five years ago, but less than twenty years ago;" some, "about the same;" only three report it as "diminishing," while more than six-sevenths say, "increasing." Winter wheat does not seem to have been even tolerably successful, the replies being, with few exceptions, that it has been tried, and resulted in failure. This, I cannot but believe, is owing in large measure to its having been sown on lands which were in urgent need of under draining, and had not received it. Not a small proportion of our best wheat land is of a character to retain a surplus of water beneath its surface, and on such, failure is to be expected, and would be almost sure, unless a very favorable season, or a combination of favorable circumstances occur to save it. There is also reason to believe, that in another respect it has as yet scarcely received a fair trial, having been often sown after corn or potatoes have been taken off, which carries the time to the end of September, or into October, which is too late to allow it time to get rooted sufficiently to withstand the action of frost. It will hardly be fair to reject it as unworthy of cultivation until fairly tested by a sowing as early as the end of August or beginning of September, upon land thoroughly under-drained. Perhaps an advisable method may be to adopt a system similar to what is practiced abroad, of summer fallows and manuring. Will not some of our enterprising farmers in different sections of the State test this method thoroughly?

It is sometimes said that a State which does not grow its own bread must be growing poor. This does not seem to me necessarily to follow, for if we can grow other products at less relative cost, to exchange for flour, we may well buy it; and such appears to be in some measure our case. Still it is worthy careful consideration and experiment, whether the cultivation of wheat may not be in some sections largely increased with profit, and also whether in others it may not be lessened to equal advantage.

FROM S. W. COBURN, BLOOMFIELD.

"The cultivation of wheat is *now* increasing. The greatest of all dangers to the wheat crop is the weevil. At first, say fifteen years ago, people sowed early to avoid it; when this failed, they sowed late, as for a few years back, fifteenth, twentieth to twenty-fifth of May. This has been partially successful, more or less, according to location. An elevated location has been more successful than lowland, because more wind to move the heads of grain to prevent the fly from resting on them long enough to deposit the *fly blow*. Much windy weather about the time of flowering of the grain is very favorable to prevent the deposit. Last year, the weather was fair at the time, windy, and good crops of wheat were the result; the same weather being favorable also to prevent the rust, another enemy of the wheat crop, and one far more likely to show itself in *late* crops; so that to avoid the weevil is only to make sure of the rust. This year, as intimated, we are getting a hard touch, in some localities, of both. Wheat, naturally, follows corn, with grass seed. When parties are timid about wheat they sow *barley*, a good seeder, and well adapted to ground in high tilth, but it does not take the place of wheat in the family economy. Oats would grow too heavy, and would not be favorable to the growth of the young grass; besides, but few soils will bear oats without *great detriment*. The draft on the phosphates, which are likely to be scanty, is, I think, a probable reason. Five years ago, winter wheat was somewhat cultivated in this region, *now, not at all*. It was always early, and consequently liable to a double damage, over spring wheat, of the weevil; and what would not have been thought likely, it was found very liable to rust. A cold winter was dangerous; a warm one also."

FROM JOHN S. MURCH.

"The cultivation of wheat in the town of Dayton is thought to be on the increase. The principal hindrances to its more general cultivation are the ravages of the weevil, cut-worm, and hessian fly. Attempts have been made to cultivate winter wheat, sometimes with good, but more frequently with poor success. When it stands the winter well it generally does better than summer wheat. One cause of winter-killing is probably late sowing, though it sometimes does well when sown late. I think it should be sown as early as August, that it may get well rooted before winter."

FROM REV. A. LINCOLN.

"Some attention has been given to the raising of wheat, within a few years past, by the farmers of Gray. More is now raised than formerly; but the uncertainty of the crop, arising from the worm, the weevil, and the rust, has had a discouraging tendency. Winter wheat, sown early, in a good soil, has generally done well."

FROM CAMDEN.

"Before the weevil and the rust became so destructive to wheat, considerable was raised in this town. Some farmers raised sufficient for their family consumption. But of late, none has been raised, till last season, when a very little was sown, and it yielded well. One man raised twenty-seven bushels from one bushel of seed sown on one hundred rods of ground. But that was a great yield—double what is commonly raised. Our farmers consider it a doubtful crop, and will not cultivate it to any great extent, so long as they can buy superfine flour for from seven to ten dollars per barrel."

FROM B. F. WILBUR.

"The cultivation of wheat, in Monson, is somewhat on the decline from what it was some ten or twelve years ago. The present year, however, more is sown than the last year or the year before. This decline may be attributed, in part, to the depredations of the weevil, and partly to the prevailing belief, that oats and other grains are more surely productive. Winter wheat is not cultivated by our farmers. None was sown in town, last year, to my knowledge, excepting a piece by the writer. Some five or six years ago, farmers tried the experiment of growing it; but they became discouraged, from its tendency to winter-kill. The writer has grown it, more or less, for several years, with tolerable success. Has never known it to winter-kill entirely, when sown on burnt land."*

FROM JOSEPH PARSONS.

"The cultivation of wheat, in the town of Parsonsfield, appears to be on the increase. The fly, or weevil, is the principal hindrance to a more extended cultivation of this grain. If our varieties of wheat are sown late, to get clear of the weevil, the rust is apt to injure the straw, and prevent the grain from filling out properly. Our present prospects for a crop are much better than they have been for some years past. I think we may, by perseverance, a little improvement in the mode of cultivation, and occasionally a shift of seed, yet be able to raise our own supply of wheat."

---

* Why has it not winter-killed on *burnt land*? Is it not because such land is better drained by the roots of trees that fill the ground, and thereby the accumulation of water prevented, so that the roots were not torn off by the heaving of the ground?

FROM S. W. COLLINS.

"Wheat, for the last few years, has diminished in cultivation, in the town of Lyndon. The weevil and the rust are the principal causes. Our soil is well adapted to the raising of wheat, and I think it will yet be extensively cultivated. The average yield is from twelve to thirty-five bushels per acre."

FROM J. FLINT, JR.

"The cultivation of wheat is increasing, in Baldwin. The principal hindrance to its more extended cultivation, I should say, is the want of energy and resolution on the part of our farmers. The fact is, most of our enterprising young men leave for the West and elsewhere. This produces a lack of enterprise among our farmers. We have not manure to raise wheat extensively; but we might raise double the amount we now do, by using economy in preserving our manures, drawing muck to our farms, and extending our grazing land. Winter wheat has been tried with poor success."

FROM CHESTER B. SUMNER.

"The cultivation of wheat has very sensibly and largely increased, in the town of Appleton. There is no reason why it should not be more extensively cultivated. Winter wheat has been but slightly cultivated, and with but indifferent success."

FROM JOHN ROGERS.

"Wheat is, of late, engaging more attention, in Kittery, than formerly. The day is not far distant when farmers will find it more for their interest to grow wheat than to import flour from the West. The blight, the rust, and the weevil are the hindrances to the cultivation of this grain, with us. I have, this season, sown, on my own farm, one bushel of the Scotch Fyfe wheat, introduced into this State by W. W. Coombs, of Augusta, that promises a bountiful yield. I think it a great gain. Of winter wheat, none has been sown here for many years."

FROM W. H. POWERS.

"The cultivation of wheat is increasing, in Bridgton. The grain worm, or weevil, as it is called, has committed such ravages in past years that the cultivation of wheat was almost entirely abandoned. But since 1850 there has not been so much damage from this source, and the crops have steadily increased. The want of an abundant supply of manure is another great hindrance. The succession of dry seasons has reduced the hay crop, and consequently the stock of manure. Wheat cannot be profitably grown without generous manuring.

Winter wheat has not been cultivated, except by some three or four individuals, and they, generally, with poor success. I have sown it three or four years in succession; but I know of no other person who has tried it more than two successive years. From my limited experience, I think, with good manuring and early sowing, say the last of August, it would not fail oftener than grass seed."

FROM JAMES M. SHAW.

"The cultivation of wheat in Waterford has increased. This grain has done well on the high ridges and elevated parts of the town; but in the valleys and lowlands, it frequently fails in consequence of the rust. Some of the principal hindrances to raising wheat, are as follows:—First, a small maggot or larva of some insect, two or three lines in length, that is found in the wheat plant soon after it is up in the spring. Second, the fly that deposits its eggs when the wheat is in the flower. Third, rust and mildew, which is most injurious in the valleys and lowlands. And, Fourth, probably the want of lime in sufficient quantities in the soil. A few years since, quite a number of our farmers tried the cultivation of winter wheat. Some fair crops of it were raised, but more generally it did not do well, and very little, if any, is now cultivated."

FROM ASA CHARLES.

"More wheat was raised, in Fryeburg, last year, and the year before, than during any other of the last twenty years. For nearly that period its cultivation had been suspended, on account of the destructiveness of what we call the weevil. Wheat is more liable to blight or mildew on our intervales than on the uplands. The weevil has not yet wholly ceased its operations. Winter wheat has not been tried much, in this town, and I think its success questionable."

FROM S. F. PERLEY.

"The cultivation of wheat is increasing, in Naples. The greatest hindrances to its cultivation are, the weevil, which attacks the early sown, and the rust, which falls on that sown late; yet, by sowing at the right time, about May 15th, the crop clears both with but little injury. Of winter wheat, little has been cultivated, and that with ill success."

FROM W. R. FLINT.

"The cultivation of wheat is increasing in Anson. The hindrances to its cultivation are the weevil and the rust. The first takes it if sown early, and the last if sown late. For the last two years, that sown from May 30th to June 4th has measurably escaped both. Winter wheat sown early in September, on new land, has succeeded well, and if our corn and potatoes could be removed by that time, winter wheat would do quite well to follow them. But sown late, it is not so sure as spring grain."

Indian Corn.

The colonists of New England early learned something of the value of Indian corn. Gradually, they and their successors added to that knowledge, and to-day, perhaps, we know something more still; but it is doubtful if the half be as yet fully realized of its true worth. It takes precedence among bread crops as yielding the greatest amount of nutritious food. Another peculiarity, and one which marks it as a most wonderful gift of Providence, is its peculiar power of adaptation to widely varying climes. Not a State, from the Atlantic to the Pacific, from Maine to Texas, but will yield this invaluable crop in abundance and with certainty. By growing it year after year, any where within the limits of the United States, if not at first just suited to the climate, it rapidly varies, until it assumes a type exactly adapted to the locality. Thus by paying due regard to the selection of seed, every locality may have its own style of corn, and the one best suited to its peculiar wants. It may ripen surely in the short seasons of Maine, or it may occupy the long summer of the sunny south; the ear may be long or short, large or small, eight or eighteen rowed, the stalk high or low, the kernel white, yellow or brown, flinty and oily, or soft and mealy; yet in all its varying phases we recognize the prince of grains, and one which experience and analysis alike show to be unequalled in the combination of good qualities which go to make up its value. These it is not proposed to dwell upon at length, nor is there need, for the bare mention of a portion of its excellencies will suffice to warrant all which is claimed for it. It will furnish more nutritious matter for man or beast, and make bread and meat at *less cost,* than any other grain. It is the surest of all grains to ripen a good crop. It is adapted to our seasons, it loves the summer's heat; and give it depth of good soil, it will laugh alike at severe droughts or drenching rains. It has fewer enemies, and is less liable to the attacks of disease and the ravages of insects, than any other bread plant; blight, rot, rust or mildew, it scarcely knows, and the fly weevil, midge, bug or worm, rarely touches it so as to damage the hopes of the cultivator.

There is ample evidence that it is gaining in appreciation, and already it would be exceedingly difficult to do without it. Not only would we be loth to dispense with our delicious corn-cakes and puddings, or the homelier, but most excellent mush, hominy and brown bread, on our tables, but our farmers would be very unwilling to substitute anything in its place in their rural economy out of doors, and for the simple reason that it has not its equal.

Its cultivation is increasing. The census returns for 1840 state the crop in Maine at 950,528 bushels, and for 1850 it is placed at 1,750,056. Thus, while in the same years the wheat crop by the same authority had diminished sixty five per cent. the production of Indian corn had nearly doubled. The impression received from the replies to the circular, is, that the increase is onward still. From one town on the shores of the Bay of Fundy, with little either of very warm or very cold weather, but abundance of fog and mist, we learn that "corn raising is not attempted here, except back from the seaboard, not being deemed a safe or profitable crop." Here and there another, (only three in all,) say its culture is diminishing, and these are easily to be accounted for. Four say, "about the same as hitherto,"—this from some of the older towns, where it has heretofore been largely cultivated. *All the rest* state it as "increasing," or "largely increasing," "rapidly increasing," &c.

The tenor of reply to the inquiry as to the estimation in which it is held as a crop for general cultivation, and how it compares with other crops, may be easily anticipated from the answers above. One complains that it won't succeed without manure and good cultivation! (A most excellent fault this; pity oats wouldn't do so too, for then we would have less starved or exhausted land.) Some three or four towns say, "not so good as hay," one, "not so good as wheat." Some reply "good," "well," "favorable,"—more say, "high," "quite good," "preferable to other crops," "first in estimation," "best," "indispensable," "must have it," and the like. Some statements are here appended:

FROM S. W. COBURN, BLOOMFIELD.

"The cultivation of corn is on the increase. It is the best crop raised, to the extent of a farmer's ability. Sward ground, fall or spring plowed, with manure in the hill and spread, plowed or harrowed in, the quantity varying from five to ten cords each coat, that in the *hill* being old, composted or in some way fermented, early planted, say 15th to 25th of May, will *usually* bring a yield of fifty to seventy-five bushels to the acre. As the quantity of manure is quite limited with most farm management, so the limit to raising corn, and also the temptation to try to raise more than the resources of soil and stimulants will justify. I have seen more grown on two acres, than on six of similar soil, the same amount of manure being applied to *each piece*. A desire to get over a large farm fast, by some hoed crop, to fit it for new grass, is quite a temptation to most farmers to try to do too much with corn. (Potatoes do not do as well for the soil as preparatory for wheat or grass.) Would it not be as well to *halve* the farms and *double* the manure? On the whole, I deem the corn crop the most certain, the most valuable, not only in itself, but in its preparatory effect for a valuable hay crop, of any crop raised, when carefully and intelligently managed."

FROM CALEB HODSDON, STANDISH.

"The cultivation of Indian corn is increasing. It yields about thirty bushels to the acre, as an average, and the yield is increasing, as the people manure more, and farm better."

FROM E. SAMPSON, BOWDOINHAM.

"The cultivation of Indian corn is increasing. It is considered a sure crop, with proper cultivation, and compares well with other crops, with the exception of hay, which yields a greater profit. It yields forty-five bushels to the acre; and I think the average gradually increasing."

FROM JOHN S. MURCH, DAYTON.

"The cultivation of Indian corn is thought to be on the increase. On good soil, properly tended, it is considered as profitable as almost any other crop; but to extend it further than this can be done, would be folly. It is cheaper to raise forty, or fifty, or sixty bushels to the acre, than fifteen or twenty."

FROM REV. A. LINCOLN.

"Indian corn is the principal cereal production of the town of Gray. The average produce, twenty-nine bushels per acre."

FROM B. F. WILBUR.

"Indian corn is grown to a moderate extent in the town of Monson; and its cultivation appears to be rather on the increase, yet farmers do not seem to think highly of the crop, as to its productiveness. On this score, it will not compare with some other farm crops. Grounds must be put in a very high state of cultivation, to produce a tolerable crop. Average, about twenty-five bushels per acre."

FROM JOHN ROGERS.

"The growing of Indian corn is fast increasing, in the town of Kittery, both for fodder, and fattening animals. An acre of this crop can be cultivated as cheap as any other hoed crop. The plants make a large amount of the very best of fodder for stock, and the grain for fattening animals. An acre of this grain will pay a better per cent., than any other crop cultivated in this town. Average yield, about sixty bushels to the acre."

FROM W. H. POWERS.

"I think the cultivation of Indian corn in the town of Bridgton, is slightly increasing—about in proportion to the increase of manure. It is the crop which claims the largest share of the manure and labor of most farmers, but I am not sure that it yields the largest return for the outlay. In many instances, the yield of corn is as high as sixty bushels, and in a few instances, nearly one hundred bushels per acre. But probably the average would not exceed forty bushels."

FROM JAMES M. SHAW.

"Indian corn is very generally cultivated in Waterford, and is increasing in amount. It is considered our most important crop. More of it is raised, than of any other kind of breadstuff. Average yield, about forty bushels per acre."

FROM ASA CHARLES.

"I do not think as much corn is raised in Fryeburg now, as thirty or forty years ago, yet I believe, its production has been on the increase for the last two or three years. It is held in universal estimation, and cultivated as one of the principal crops by every farmer, and is regarded as one of their most profitable crops. Average yield, about thirty-five bushels per acre."

FROM S. F. PERLEY.

"The cultivation of Indian corn in Naples, is on the increase. This, above all others, is preferred as a hoed crop; and probably, it occupies a greater breadth of ground, than all others united. No farm or garden is without its patch of corn. Average yield, about twenty-five bushels per acre."

FROM W. R. FLINT.

"Indian corn is more extensively cultivated in Anson than any other crop, and is largely on the increase. It is decidedly the best of the cultivated crops, not having made a failure but once in twenty-five years, and then not a total failure. This was in 1851. The average yield in this town may be forty-five bushels per acre."

Some of the estimates of average yield as above given, are believed to be too large. It may be near the fact as to average on the best farms, but it is seriously doubted whether the production of all the farms in any of our towns will average more than forty bushels to the acre, and probably fall short of it. From the best information at hand, the average throughout the State is nearly as follows: viz., Indian corn, thirty to thirty-five bushels to the acre; wheat ten to twelve bushels; oats thirty to thirty-five bushels; barley twenty to thirty bushels; rye ten to twenty bushels; potatoes one hundred and fifty to two hundred bushels.

One correspondent, writing somewhat more in detail than most, says:

"The average yield of Indian corn, I think, would fall a little short of forty bushels per acre; wheat would not exceed fifteen bushels; oats are not much raised here, but the yield, on good ground, would be not far from twenty-five bushels—average, about twenty bushels; barley, about fifteen bushels; buckwheat about the same as barley, though it will do well on poorer land, and sowed later than any other crop, say last of June. This article, dreaded by some farmers, on account of getting the seed into the ground and mixing with next year's crop, does not impoverish the soil; but leaves it in a light and mellow condition for the next crop, and if of the same grain, it will usually yield more the longer it is used. Old pastures, I think, might be subdued by this grain, sowed, say, two years, and then sowed to grass; as it is a great subduer of the sod, on account of the heavy shade. It is not bad to seed with, because it comes off in good season, and leaves the ground in good state to forward the young grass, the stubble not being in the way, as with oats.

Peas, sowed alone, yield about ten bushels; beans, with corn, about five bushels; with us they are not raised alone. It would be difficult to say whether this average is increasing or diminishing, except as it is affected by the seasons being favorable or otherwise.

Last year, for example, the wheat crop was good; this year, it was badly eaten by the hessian fly in spring, by the weevil in flowering time, and rust and blight or mildew have nearly ruined the balance of the crop. Potatoes, last year, were better than usual here; this year, it is thought, the rot will nearly destroy the crop. Corn is later than usual, but if the frost holds off late, it will be good; early frost will nearly ruin this crop. Thus it is that we are much affected by the seasons, entirely independent of the method of husbandry. This method has not changed much for years, though there is more inquiry as to what is to be done for the future, to improve and render more certain and more profitable the farmer's reward. The farms have not been diminished in size, so that labor is spread now as formerly over the same wide domain; and as the farmer has no confidence in hiring much labor, at the present price, it is spread equally thin with former years. Unless this can be changed, there is a permanent bar to much improvement in the mode and reward of farming. Farmers are aware that they try to do too much, and work too much land; but still they are buying more, the idea not being carried into practice by selling half of the farm and working the balance better. Knowledge of improved methods of farming could then be made more available than now."

Implements of Husbandry.

Something has already been said of the importance of applying science to agriculture. A perfect implement of husbandry may be deemed a *visible and tangible embodiment of science* applied to practical agriculture. The importance of using such tools or machinery, as will accomplish the best work with the greatest ease, is too obvious to need enforcement. It is believed that their use would effect an advance in practical agriculture, more rapidly than any other means which could be used. As labor is growing scarcer and dearer every year, the expediency of adopting not only improved methods of husbandry, but also all available improvements in implements, grows stronger, and even becomes an imperious necessity. If a few extra dollars are needed to secure a better plough, which will save an eighth or a quarter of the labor, the outlay is soon made up by the saving, and all saved beyond this is clear gain. Manufacturers understand this better than farmers. Ask one who has been engaged for twenty years in manufacture, (of cloth or paper for instance,) if he has ever found it good policy to throw aside, like an old almanac, costly machinery, which has done, and may yet do excellently well, and he will reply, "many a time." His competitors have introduced such as will accomplish work better and cheaper, and he would be undersold and ruined, if he did not avail himself of every improvement as early as possible. He could not afford to do otherwise.

Much has already been accomplished in this direction, on behalf of agriculture. If any were skeptical on this point, a fair exposition of the implements of a half century since, and beside them, those now in use, would be perfectly convincing. The old bull nose plough, well remembered for its convulsive struggles in the soil, and with its holder, would be found replaced by the cast-iron plough, with its gracefully curved and well polished moldboard, passing smoothly and easily through the soil, scarcely needing one to hold it; by sub-soilers too, and deep tillers. The old swing flail would find its representatives in many and varied threshing machines; the grain riddle, in winnowing machines, fanning mills, and separators; the back-aching sickle, in reapers of ingenious construction; the hand hoe and rake, in horse hoes and horse rakes; and so on through the whole; the one, a scanty list, and light, scarcely sufficing to fill a cart; while the other, in full assemblage, might load a train of railway cars.

But though much has been done, much more remains to be done. The best plough now known, consumes at least two-thirds of the moving force to overcome friction and cohesion. Here is a wide field for improvement; so wide, indeed, that coupled with the fact, that it does some harm by compressing the under-soil, as well as great good to what is above, in loosening and pulverizing, that it is by no means certain that it may not some day be superseded as an instrument for the pulverization of the soil. There is also great room for improvement in our newer implements, as the mowing machines, which, thus far, either through inherent fault of construction, or fault of materials or of workmanship, or, more likely, of all combined, have, thus far, failed, in some degree, to supply the want it was intended to meet. Yet progress is onward, and rapidly, too. It is by no means true that every new invention is an improvement, or that some highly lauded patents may not prove arrant humbugs, yet this no more proves it good policy to reject all, than it would be to refuse all coin, because some in circulation was counterfeit. A better way is, to prove well, and hold fast the good, and this proving of a new implement is not always a very easy and simple affair. *Intelligent* labor is as necessary in its operation, as scientific skill was in its original construction. A plough may be perfect in model, and yet prove a failure in practice, unless the materials and workmanship be good; and with these good also, from lack of skill in its use.

Multiplied and rapidly multiplying as labor-saving machines now are, it is well that our farmers be advised of the experience of their neighbors in their use, and with this view a few statements are here appended:

FROM W. D. DANA, PERRY.

" The cast iron ploughs have come into *almost* universal use. A few of the old wooden ones are still in existence. I don't know of any one using the old Roman crooked stick, or attaching it to the oxen by their tails. Cultivators and horse rakes are in pretty general use. Threshing machines and mowers are used by two farmers. but although so slow in adopting new implements, (a portion of which are nothing but humbugs) our farmers are adopting improved modes of husbandry, and the better drainage, ploughing and cultivation generally, is attested by the increased fertility of the fields."

FROM S. F. PERLEY, NAPLES.

" Farmers here have been slow to introduce improved implements, or adopt improved methods of husbandry. The iron plough, the cultivator and the horse rake have been extensively used. Also improved hand implements, and the drill barrow for sowing small seeds.

One mowing machine has been put in operation in this town, of Ketchum's manufacture. But it does not fully meet the wants of the farmer. It performs its work well, where the burden does not exceed one and one-half tuns of hay to the acre. In heavier grass, it is inclined to clog. Its work is one acre per hour. It will work on ground not perfectly smooth, or free from stones, though it is at the expense of extra wear of the machine. Thorough preparation of the ground is good economy. The most serious objection to this machine, is the severe labor it imposes on the team. The heavy draught, coupled with the requisite speed, a fast walk, soon exhausts a team of two horses; and a four horse team is cumbersome to manage, making so often short turns, and also adds to the expense. Five or six hours per day is all a single pair of horses, weighing ten or eleven hundred each, ought to perform of such work. Improvements can and will be adopted, and perhaps have already been made in this machine, or other machines introduced better adapted to the work, which will enable the farmer to secure this most important crop of Maine, at far less expense than is done at present, and at a great saving of human bones and sinews."

FROM ASA CHARLES.

"The best of tools are in use in Fryeburg; such as ploughs, cultivators, hoes, scythes, horse rakes, and axes. The general sentiment is favoring deeper ploughing; and the subsoil or double plough is lately introduced with considerable favor, though we have not used it long enough to determine its real value from experience."

FROM JAMES M. SHAW.

"Improved patterns of the plough and cultivator are generally used in Waterford. Of the smaller implements of husbandry, such as hay and manure forks, shovels, scythes, hoes, grain-cradles, &c., the best kinds are much used. The spring-tooth horse rake is considerably used; but some of our farmers do not like it at all. It rakes up so much dirt as to injure the hay. Improved threshing machines are used. A few of the drag-rakes have been used the past and present hay seasons. Some of the results of the use of improved implements, are a deeper and more thorough pulverization of the soil; consequently, more sure and increased crops. By the use of improved implements of the smaller kinds, a greater amount of labor can be performed in the same time, and with more ease. As to improved methods of husbandry, I am not aware that any very important change has been made recently; although, when our farmers become satisfied that a new method will be advantageous, they are ready to adopt it."

FROM W. H. POWERS.

"We have in Bridgton but one mowing machine. A majority of our farmers use horse rakes of some kind; chiefly the spring tooth. Corn planters are used in a few instances, with good success. Ploughs, and the smaller hand tools, are generally of the most approved patterns."

FROM SAMUEL HASKELL.

"New implements have been introduced into Cape Elizabeth, but not to the extent to compare with the improvements in husbandry. I have one of Ketchum's mowing machines, but must say, it is a failure. This year's grass is tender, and when there is a thick bottom, it will not cut it close enough, and clear itself, to make it any object in using it. In those dry seasons, it did tolerably well: but after all, there is no gain in using it. I have one of Delano's horse rakes, which is used with wheels. I consider it a great improvement over the revolver—certainly, the greatest improvement among my farming utensils."

FROM S. W. COBURN, BLOOMFIELD.

"New implements, to some extent, are being constantly introduced into our farm management, and out of them all, much advantage will be derived. The cast iron plough has long since entirely taken the place of the old wooden plough with iron plates nailed on to its moldboard. The cast iron beam has been a failure here, on our rocky soil, by its liability to break, though that pattern of plough makes good work on easy land, and for shoal ploughing, say six inches. The harrow is an instrument every farmer manufactures himself, to suit his own taste, but I do not think it has attained a perfection proportionate to its importance as an agricultural implement, or to its great number of manufacturers. The old fashioned crotch, the double crotch, and the square harrow in some form, make up the principal patterns in this implement. They divide the ground very coarsely, and by the teeth setting little back, serve to pack the soil rather than lighten it, as they should. I have had in use, for more than six years, a harrow, the idea of which I took from a cut of one of the great variety of patterns used in Massachusetts, though I made some variations which I think useful. To make one, take six pieces of elm joist, as that timber is both light and tough, three and a half or four inches square, and about six feet long, two of them being eight inches longer than the rest. Place three of them even at one end, one of the long ones in the middle, and twelve inches apart from centre to centre; about twelve inches from the ends of the joists, also in the middle, mortise and put through an inch by three inch support, letting the end run through on one side of the three pieces, about six inches. Form and frame together three more pieces in like manner, and lay them alongside, about one foot apart, with ends of the cross slats making bearings together, and one long end of the joist being at one end, the other at the other end. Confine these two sides together by two heavy, square, and well fitted iron rods, running through at each end of two of the joists, with a nut on the end, and a flexible joint in the middle, in a line with the long ends of the connecting slats. Fit a clevis to each of the long joists; now mark for a tooth in each long end just back of the clevis; and as this harrow is calculated for twenty-four teeth, there are twenty-two more to be inserted; if they are so arranged as to have no two of them follow each other in the same cut, they will make twenty-one spaces from outside to outside. Divide, then, this whole distance, from outside to outside, into twenty-one spaces, by snapping a chalk-line on the harrow frame, in equally distant parallel lines, beginning at the centre; now make the holes for the teeth as near where these lines cross the timbers as practicable, varying them at the extreme outside, to prevent the teeth being too close together in the timber, but not allowing two teeth to be put into the same line. Insert the teeth perpendicularly, so that the harrow may be drawn a portion of the time by one end, and then the other, *self-sharpening* the teeth, as well as keeping them straight, not bedding the soil. This harrow may be drawn by horses over rocks and the like, and need rarely be unhitched, as the middle will rise and let a rock pass, with the two sides of the harrow doing execution on the soil, or either side will wing up like an opening door, the other sustaining the most of the weight and doing its appropriate work. The part of the harrow drawing ahead has the teeth in the timber nearly eighteen inches apart, so that they offer but slight resistance, and cut coarsely, at first, till the harrow has fairly got within its clutches the sods, lumps, or what not, to be pulverized; it then begins to subdivide them till they come out like grain out of a mill, well chewed up, and with no possibility of escape. It will rasp a knoll, go into dead furrow, or straddle a ridge, with equal facility, and do admirable execution. Grounds once harrowed by this harrow I deem *more* benefited than twice harrowed by *any* other I ever saw; hence it is, that I have been thus particular in the description. I have seen cuts of the like, except the plan of varying the distances between the teeth in the wood, which I deem of utmost importance. A harrow on the same principle may be made lighter by putting three teeth to the joist, making eighteen teeth, or by having four joists with three or four teeth each. I took this harrow, a few years since, to an Agricultural Show, and received the premium on it; but I cannot say that a single farmer has made one like it, though I have never had it used by any one who has not admitted that it is the best he ever worked with.

The common cultivator is now generally in use, in hoeing time, by most of our farmers, having taken the place of the plough. I have had in use, for some three years, the horse *hoe*, in place of the cultivator, and deem it a great acquisition; so do my neighbors I think, for many of them use it, though I do not know of another in town. When the cultivator saves half of the work, the horse hoe will save the other half, or by doing a trifle after it; the soil will be left much better adapted to the growth of the crop, than by any other process yet known.

The roller, in some form, mostly the log roller, to be used with oxen, is in general use among our farmers. Though the roller may be used to great advantage in pulverizing soil for any crop, I think it will be generally admitted that no ground can be properly fitted for mowing without the use of the roller.

The use of the roller may be thought by some to render the soil heavy, but I think experiment will show that it leaves it lighter in the end, for the freshly stirred soil lies lightly when dry and buoyed up by the inclosed atmosphere, but the first heavy rain, thoroughly saturating the soil, will cause particle by particle to fall with the descending current to a much lower level than when the surface has been gently pressed together by the roller, bracing the same as by a bridge, inclosing much light soil, just as it tumbled lightly particle on particle. Besides, unpulverized portions of soil or manure are either useless or injurious in their influence on vegetation, and not a little in the way of securing such portion of the crop as the fine soil has produced.

Grass ground rendered uneven by frost, and the grass roots much exposed to perish in the dry breezes of spring, may, I think, be rolled to great advantage. This is especially true of clayey loam, land on which the turf often disappears on much of the surface by the action of the frost. My habit is to roll all ground at all lumpy, designed to be laid to grass, twice; once before the last harrowing, and once after. This renders it quite firm and even.

I have a roller constructed by a very ingenious mechanic, a short description of which I will give, as it is a little better than any I have seen. Take two pieces 4x4 inches hard wood joist, 2 feet 2 inches long, and halve them together at right angles in the middle; fill the corners with planks, in the form of a wheel. To keep all fast, put round on the outside edge a rim 4 inches wide, of hard wood board, screwed on. This forms one end. Make the other like it, then add to each on the outside an oval piece of 4 inch timber by 2 inches thick, and about 10 inches long. Make this fast to one of the cross joist, where the spindle goes through, the outside being made so oval as to have a smooth and small point of friction at the end of the spindle. Mortise and insert a square bar of iron, 1⅜ inches round at the ends, and inside of the end having a head or stop put on hot, over the bar, so as when cold to be fast. Cover these ends with strips of plank 2½×5 inches, sawed to fit on the outer circle. Make the end pieces of the frame about 5½ feet long, running an equal distance behind and before, with two cross supports at each end. In the middle of the ends, frame in upon the under side a 4 x 4 inch joist, 12 inches long, at right angles, well braced on the back side. Drop these on to the iron spindle, half way down, and key below, transversely with the spindle, making a small hole on the outside and above obliquely, and running to the centre of the gudgeon, to oil the same, inserting a stopper. The thills are bolted firmly on to the forward bars, at an angle of about ten degrees of elevation. A seat may be added of spring steel or wood, to suit. Fasten also, a sharp edge of iron on the cross-bar, close to the roller behind, to clear off the mud, also a place to deposit anything which may lie on the ground, needing to be removed to the outside of the piece, such as sticks, knots, or even stone, if not too plenty. All but the covering plank should be painted. A roller thus constructed may be taken apart by taking out the keys, and packed away separately ; and if thus well taken care of, may last a generation at least, and a boy twelve years old will roll one acre per hour with ease and safety,—cost about twelve dollars.

Most grain here is mowed, some cradled, a little reaped in the old way. There is but one mowing machine in town, and that has been used but a part of the present season—not long enough to speak with decided confidence in regard to its general success. Of course, it cannot be used on rough ground ; but rough ground should be made smooth before it is mowed. I think it quite likely the time will come when mowing will be mostly done by the machine. If necessary to this end, improvements will be made. In this age, it is only necessary, in order to secure any invention, that there shall be a demand for it, and the supply rushes in at once.

The old revolving horse rake is more in use here than any other; though I am sure that Delano's rake is by far the best thing yet in use for raking hay. It works almost equally well on rough and smooth ground, saves one hand, and is easy of transportation. I have raked with one of them thirteen acres in an afternoon, and what is more to the point, it was well done. Grain may be well raked with them ; if any dirt is gathered, a slight shake before upsetting the grain will leave it quite clean. Most grain here is threshed by the machine, though many think it the most expensive way."

Tillage Lands.

The rewards of agriculture are not so much to be estimated by the extent of surface cultivated, as by the thoroughness of the cultivation. Wherever high farming is pursued, and by high farming is meant simply *good farming*, not only are larger crops obtained, but they are both more surely, and more cheaply obtained. It is comparatively seldom that a crop adapted to the soil and climate, properly fed, and well tilled, does not succeed ; while slovenly and stingy husbandry often results in failure. Thus to find an increase of land under tillage is no evidence of advance, unless accompanied with indications of an improved culture also.

The general tenor of reply to the question of the circular is, that the amount of tillage land is increasing, but I am not able from it, to state with certainty, whether it is owing rather to an increase in the breadth cultivated by each farmer, or to an increase in the number of farms and farmers. In some instances allusion is made in connection with this increase, to better cultivation as accompanying it, which is highly satisfactory as indicating to such extent as it may prevail, a healthy development.

About one tenth of the towns heard from report a decrease. In two of them specific reasons are assigned, which show that under the circumstances, this decrease might be naturally expected. In all the others, the reason is distinctly assigned, that it is found better policy to work less land and to do it more thoroughly; one says, "the number of acres is not increasing in proportion to the number of tillers. It has been found that one acre well cultivated yields a greater profit than two acres indifferently cultivated," and much of similar import is received from many sources.

Woodland.

The value of a forest growth is not confined to its production of wood and timber. It exercises an influence on climate, and especially with regard to the fall of rain. It is well known that showers are more frequent in wooded and mountainous districts than in those stripped of their forests. Their removal increases the rapidity of evaporation from its surface, and diminishes the means of condensing the vapor, and precipitating it in the form of rain. In a country so liable as ours, to severe droughts, this is a consideration of no small magnitude.

An occasional belt of trees is also of great service in furnishing shelter to our homes and our fields, by breaking the force and severity of high winds. The value of the shelter thus afforded cannot be appreciated without careful and critical observation, and it is believed that it will be found of very much greater consequence than has usually been supposed, as such belts not only lessen the violence of winds, but seem to exercise such a modifying influence, sifting them, as it were, as to deprive them, in great measure, of their blighting effects upon vegetation. So well convinced are some of our farmers, of the importance of shelter, that in a number of cases where the natural growth had been thoughtlessly cut away, belts or screens composed wholly or in part of evergreens, which are well adapted to the purpose, have been planted.

Of the economical value of our forests, it is, perhaps, needless here to speak. It is becoming every year better appreciated, and the replies show that in those sections where they have been most lavishly drawn upon hitherto, greater care is now taken, and that a large amount of younger growth is making rapid advance. One correspondent says: "Our young growth is now gaining very fast, and I think we have as many acres on which wood and timber is now growing, as there were ten or twenty years ago." Another says: "In regard to the woodlands, I am happy to say, that the people are becoming more economical. Much less wood is wasted than formerly, and we now have a beautiful second growth of oak, pine, maple, and other less valuable wood, which if properly managed, and kept from fires, in a few years will greatly enrich the owners, and increase the resources of the town." A third remarks: "The woodman's axe has been busy with us. About every lot of wood and timber that could be bought, has been purchased by speculators and stripped of its growth, till the sturdy oak and lofty pine have nearly disappeared. The lots, however, are generally left to grow up to wood again, so that taking the growth of all sizes, the number of acres of woodland is probably on the increase." Many other communications are to the same purport.

Swamp Land.

There exists in our State a large amount of swamp or bog land, not so often found in large tracts, as in those of moderate extent, and comparatively few farms have not more or less of it. It may be only a small patch, sufficient to furnish a supply of muck for the barnyard, cellar &c., but more frequently there are a number of acres, greater or less. This is believed to be in many cases the most valuable portion of the farm, or perhaps more correctly, that it may easily be made the most profitable. As yet but a very small proportion of this land has been reclaimed. While our farmers are striving to increase the amount of hay upon arable lands, their most available resources to effect such increase are often left untouched. That the value of such land is not appreciated is evident from the merely nominal price at which in most instances it is held, while if its value was properly understood, a goodly portion of the upland would be readily parted with, if necessary, to furnish means to reclaim this. The replies show that they have been very generally neglected throughout the State, while there is an almost uniform testimony as to the satisfactory nature of the results, where efforts have been made to reclaim them. Only two instances are found in which this is not the case, and it may well be doubted, if in these, the experiment was fairly made. One says, the result was not satisfactory, the other, that the cost is too great, and no further particulars are given. All others say, that at a cost varying from fifteen to sixty dollars per acre, it has been found a profitable investment, paying all expenses in from three to five years, and it is apparent from the tenor of remark, that those whose experience is greatest and whose practice the most thorough, attach to them the highest value. I have been disappointed in not being able to obtain written statements of facts, which have come to my knowledge, and which would serve to place the value of such lands in a strong light. Some have, however, been received in the replies to the circular, and a few are appended :

FROM S. W. COBURN, BLOOMFIELD.

"There is probably about three hundred acres of low meadow in this town, most of which is mowed for the natural meadow grass growing on them, with little effort to bring them into English grass. Some have been cut through with one main ditch. Some have been resorted to for the muck they are composed of. Ditches on the border of meadows and swamps, if only one can be afforded, will be found far more useful than one through the middle. Cold soaks from high lands are the bane of all low, wet spots, as this water is cold and springy, and consequently, destructive to a high order of vegetable life.

People in this region have been far too shy of their low, wet lands. These contain the cream of uplands and often of barn yard and farm house besides. Properly drained, they are a never-ending source of repair to the rest of the farm. No farmer is entitled to the name, who lets such fertile spots run wild with flags and rushes, vocal with the music of frogs and tree-toads. One reason why these places have so rarely been cleared up, and made the beauty of the farm, is that the farmer has never seen it done, and does not know how to set about, nor feel a confidence in the work. To the more intelligent, the great excuse of having too much to do, is ever potent and ever present even to crowd out the most important of all reforms, the saving from waste of riches already existing, and lying ready at hand to be revealed and made ever available."

FROM W. R. FLINT.

"The level, impervious subsoil land of Anson, has been much improved by back-furrowing, and deepening the dead furrow for drains. Draining is not extensively practiced in this town. I know of quite a number of small swamps drained to good effect by sinking a ditch, say three and one-half or four feet, using stone or cedar for drains, covered with earth. The land was thus completely reclaimed, where water stood six or eight inches deep through most of the season. One such drain, if built between the high and low land, will usually drain all below it. The ditch will cost about as much, after finished and the ground leveled off, as a good stone wall or cedar fence, per rod, and will be as durable."

FROM GEORGE BEARCE.

"Swamp and meadow lands, in Minot, have been reclaimed, to some extent, at an estimated cost of fifteen dollars per acre. These lands prove the most profitable lands in town."

FROM M. H. FRENCH.

"Swamp and meadow lands in Corinth, have been reclaimed to but a limited extent, but with good results. At what cost I am not able to state. We have much of this kind of land in town, which, a few years ago, was considered worthless, but is now beginning to be reckoned among our most valuable lands."

FROM E. HAYES

"The meadow lands in Berwick have been reclaimed to a small extent. We plough them after haying, harrow them down, and sow on leached ashes and hay seed. It costs about fifteen dollars per acre to do this."

FROM J. M. SHAW.

"Swamps in Waterford are more cleared than formerly, and in some instances are drained by ditching. Not much is done further to reclaim them. Cannot state the cost. They are mostly devoted to the production of grass, and are found to be profitable."

FROM J. S. MURCH.

"Swamp or meadow land in Dayton, has been reclaimed to considerable extent, and with satisfactory results. The cost is variable, some swamps, being more filled with tough grass roots than others, require more labor to clear them.

I have on my farm, six acres of reclaimed swamp or meadow land. I think it cost me at least fifteen dollars per acre, to clear it of bushes and stumps, and fifteen more to plough and lay it to grass. It took a team of eight large oxen, with a large bog plough and four hands, and we averaged about half an acre a day. Three acres of said land were ploughed in beds two and a half rods wide. The other three acres were ploughed in beds four rods wide. I think the latter width preferable, if the swamp be not too wet, as they are more convenient. One and a half acres of said meadow, I sowed with winter wheat, on the fifth of September. I sowed one and one-half bushels on the piece, and half a bushel of herds grass seed. Both came up well, and stood through the winter; but the next spring and summer, the herds grass choked the wheat, so that I cut considerable of it for fodder. The herds grass grew as high as my shoulders, with handsome heads. I got but seven and one half bushels of wheat from my bushel and a half of seed; whilst my neighbor, Levi L. Peavey, on precisely the same kind of land, on the opposite side of the fence, got fifteen or sixteen bushels from five pecks sowing; and his was sowed later than mine, and did not look near so well in the spring. But he did not sow hay seed. I have mowed the land last named, three years, and the remaining four and a half acres two years; and I think it has averaged from one to one and one-half tuns of hay per acre, which hay I sold last year and the year before in Biddeford market, for eighteen dollars per tun. No manure was used. Before ploughing, I cut, as I suppose, from half a tun to a tun of ordinary fresh hay. As a drawback to meadow land, I think it is more subject to rust than upland.

Dr. Samuel Hight has done considerable in reclaiming swamp land, and he informs me that he raises good potatoes on it, and they have never been infected with the potatoe rot. He complains also of the rust injuring grass.

Mr. Joseph Smith, 3d, of Dayton, and Mr. Thomas Day, of Biddeford, own a fifty acre lot of swamp land near me, which, since I can remember, has been considered almost worthless, being covered with a tangled growth of alders and willows, interspersed with a scattering growth of elm, yellow ash, maple, pine and fir. In the spring, it would be vocal with the delightful music of the bull-frog. Said meadow has been cleared and ploughed, perhaps twenty years, and I think it has produced more than a tun of hay to the acre, on an average, during that time. The land being entirely level, it is a beautiful sight to see the cocks of hay, in haying time. The frogs have disappeared, and their music is no more. Lying in sight of where I write, I often mark the striking contrast.

Messrs. Smith and Day raise good corn, potatoes and grain on their swamp lands, in good seasons. The wire-worm, however, is troublesome. Mr. Smith mixes sea-sand with his manure, which, he says, is a great preventive against the rust. He also thinks manure has more effect on his swamp land than on upland. Col. John M. Goodwin and Levi L. Peavy have made valuable improvements on their lowlands, and with very beneficial results. On land that formerly produced nothing but poor fresh grass, flags, rushes, and other wild weeds and bushes, they raise well-grown corn, potatoes, wheat, oats, and rank and luxuriant herds grass. Col. Goodwin showed me a piece of herds grass two years on one of his lots, the rankest grown, I think, I ever saw. Others have made more or less improvement with good success. I have known of but two instances where it did not succeed well, one of which was spoiled in clearing, by being set fire to, in a very dry time, which burnt the soil all off. And the other had no seed sown but chaff from the barn floor.

Col. John M. Goodwin promised to make a statement of his operations on swamp or meadow lands, but has not done it. I believe he has cut three tuns of hay to the acre."

As somewhat akin to the reclamation of swamp lands, yet differing sufficiently to warrant and demand a separate consideration, is the topic of

Under-Draining.

There is probably no subject connected with agriculture, of equal importance, which is both so little understood in theory, and so much neglected in practice, not in Maine only, but throughout the country at large, as that of the drainage of land.

All readily admit that where water stands upon the surface, draining sufficient to be well rid of it, is necessary and proper, but few comparatively, among us, understand the benefit to be derived from a thorough drainage of all lands which *overlie* an *impervious* or *retentive subsoil, and thus contain stagnant water beneath the surface.*

In England, this subject has been thoroughly investigated, and extensively tested. Of its results, an intelligent observer says: "There is something magical in the effect of draining. Both meadow and arable lands are equally benefited by it. In the meadows, marsh plants disappear; the hay produced, is at once more abundant and of better quality. On the arable lands, even the most clayey, corn and roots shoot more vigorously, are more healthy, and require less seed for a larger crop. The climate itself, gains sensibly by it. The health of the inhabitants is improved; and in all cases where drainage has been vigorously carried out, the mists of the foggy isle seem less thick and heavy. Drainage was thought of for the first time, ten years ago, and a million of hectares,* at least, are already drained; every thing promises that in ten years hence, almost the whole of England will be so. It is as if the Island were once more rising out of the sea."

Capitalists there, are ready and willing to advance money to drain lands needing it, taking no other security than the *increased value* of the land; for instance, suppose a farm to be valued at two thousand pounds; to drain it would cost another thousand pounds. The capitalist advances the needful amount, taking a mortgage, conditioned that it shall *not* take effect in any case upon the original appraisement of two thousand pounds, but only upon the increased value beyond that sum; so that the owner hazards not a farthing in accepting the terms. Surely, money-lenders, who will do this, must have faith in the efficacy of drainage; nor is their confidence misplaced. Money judiciously expended in draining lands, is a safe investment, either in Old England or in New England. It may not pay so large a per centage of profit here, for labor being higher, it costs more to drain; nor do farm crops bring so high a price with us, yet increase of productiveness and of *profit is perfectly sure* here. Some advocates of draining, indeed, go so far as to assert that all lands are benefited by it. With such we have no controversy; merely remarking that it will be in ample season to discuss the merits of draining such as overlie a porous subsoil, when those which unquestionably need it have received due attention.

---

* The hectare is nearly two and a half English acres.

A safe test to decide whether it be urgently necessary or not, may be thus applied: dig a hole three feet deep; if at any time, water is found to remain in it for three days continuously, whether from rains or from the contiguous soil, there can be no question whatever. Such lands are familiarly spoken of as *cold*, and very properly so; but what makes them cold? not certainly because more water falls on them than on others, or because the water which does fall is any colder. It is because that which falls is *retained until evaporated*, instead of passing away downwards. Evaporation produces cold. If a person after bathing, stands in a current of air, he feels the cold thus caused. Water, in passing into the state of vavor, *absorbs* heat, and in this case, it takes the heat from the wet body, and so its warmth is sensibly lessened.

Water, in being evaporated from the soil, absorbs heat from it, and so the soil becomes colder. If we apply heat to water it passes off as vapor, and no more heat is carried off by vapor, when we heat the water over a fire, and thus bring it to a state of vapor, than when it evaporates more slowly from the soil. Now calculate how many gallons of water must be evaporated from an acre of land which rests upon a hard pan, a solid clay or other retentive subsoil, before vegetation can go on successfully, and ascertain how many degrees of heat every gallon must abstract from the soil in the process; and we shall have some data by which to judge how much heat could be *saved* to that acre, *if we could only tap it in such a way as to draw off the water from the bottom, in liquid form*, instead of having it pass away from the top as vapor.

Thus we see that draining such lands, necessarily renders them warmer, by *saving* heat. It may not be easy to say *exactly how much* warmth is thus realized; but it is believed to be equivalent to a remove of several degrees of latitude southward. We may add to this, that the warmer rains of spring, instead of remaining until evaporated, thus inducing more and protracted cold, pass readily downward in drained land, leaving their warmth in the soil, so that heat is not only saved but gained.

Another advantage resulting from drainage is, that such lands can be worked advantageously at an earlier period in spring; for the draining *goes on all the time;* the subsoil is never long saturated, and we often find such land in spring to be drier at a foot or two feet in depth, than on the surface; and just as soon as the top soil is fit to work, farming operations can go on. Clayey loam overlying a solid clay subsoil, I have thus worked early in April, which before draining, it was not safe to disturb until the middle of May. Thus is the season virtually lengthened, and not only by an earlier spring, but also, by a later autumn.

Such soils as we now have under consideration, are not only familiarly spoken of as cold, but also as sour—not because there is actual acidity in them, (though this may possibly be sometimes the case) but rather because organic matter, both vegetable and animal, lying in a soil saturated with water, is not readily decomposed, but remains in a sort of putrid or stagnant, certainly, an unprofitable and unavailable condition—sometimes, it may be, little better than poisonous. But draw off the water, and *air* immediately enters, taking its place; and this facilitates the rapid decomposition of organic matter, and its conversion into soluble and suitable food for plants, or as the phrase is, "the soil sweetens" at once. *Ventilation* of soil is, perhaps, as little or even less thought of, than draining; but the access of air to the roots of plants, is undoubtedly, not only beneficial, but necessary to their health and thrift; and every farmer virtually acknowledges its importance, whenever he disturbs the soil, with any tool, for any crop.

This substitution of air in place of water, making the soil porous, also makes it a worse conductor of heat; and we find, accordingly, that the depth to which it freezes in winter, is considerably less after being drained, than before; and roots consequently suffer less. Winter wheat might thus pass its earlier stages in perfect safety on drained land, when it would perish on one saturated and frozen solid; and this is doubtless a principal cause why this crop has so often failed with us,—a large proportion of the land upon which it has been tried, being such as needs draining and has not received it.

The access of air to the *sub*soil, secured by means of drainage, is of value also by virtue of the ameliorating influence which it exercises upon it, in causing the disintegration of its particles, and its gradual conversion to the qualities and properties of the surface soil. The subsoil is thus as really brought into contact with, and under the influence of, air, as when it is thrown to the surface by the action of the plough, and a gradual deepening of the soil is effected, and an addition of fertilizing material secured.

Time and space would fail, at present, to attempt anything like a full exposition of the theory and practice of draining in its varied phases; but there is one other point, to which attention is invited, because of the great misapprehension which prevails in the minds of many respecting it.

The remark has been often made in our hearing, that the benefit arising from drainage in England is easily accounted for by the excessive humidity of the climate, and not only proves nothing in favor of its efficacy here, where the most striking feature of our climate is a liability to severe and protracted droughts, but affords presumptive evidence that it must prove injurious in a climate so unlike.

If the proposition was to drain the atmosphere, instead of the soil, there might be some point in this, and some weight allowed to the inference; but the fact is, that although we have fewer rainy days, we have as much rain fall here as there, or more, and the water once stagnant in the soil, a foot (more or less) beneath the surface, is very slightly influenced by either sunshine or drizzle over head, its chilling effects upon vegetation go on much the same.

But this is not half the truth. Paradoxical as it may at first blush appear, that a removal of water by drainage, may tend to secure a supply of moisture, yet it is a fact, easily accounted for in theory, and abundantly demonstrated by experience, that thorough drainage (and especially in connection with deep tillage) is our *surest and most effectual safeguard against droughts.*

To understand this, let it be borne in mind that drains, however deep and frequent, can never take from the soil (such soils as we are considering) any amount of water which is necessary for vegetation, for all will retain enough, and stiff clays more than enough, by *capillary attraction*. This capillary attraction is the power which enables a sponge to absorb and retain moisture. Take a piece of dry sponge and weigh it; now wet it thoroughly, and after allowing all the water which will pass off by its own weight to do so, weigh it again, and we find it much heavier than before; now expel as much as possible of the water by pressure, still it is heavier, showing that water is yet retained by some active and powerful agency. This is a fair illustration of capillary attraction, a power which acts in direct opposition to that of gravity. The weight of the water in the soil, or its gravity, is the only power which sends it to the drains, consequently only *the excess* can be thus carried away. To illustrate farther, let a barrel be filled with dry, loamy earth, and after adding water (a measured quantity) to saturation, tap it at the bottom, and see how much can be thus drawn off; we find that after it ceases to run, a considerable portion is retained, the earth is still as moist as is needful for the germination of seeds or the growth of plants. (Before the barrel is laid aside, pour some liquid manure from the drainings of the barnyard into it, and thus illustrate another fact relative to the subject, which is, the power of drained land to *absorb and hold on to* manure, allowing only water to pass away.) Try still another experiment: fill the barrel again with dry earth, leaving the hole in the bottom, and set it in a tub or puddle of water; gradually you find the water *ascending*, by the force of capillary attraction, until the whole is moist.

We are now ready to inquire, why do plants suffer from drought, and the answer is, obviously, because the roots do not penetrate deep enough to find moisture, for there is always water enough in the soil, if the roots could only reach it, and if it be asked, why they do not thus penetrate, one grand reason will be found to be, that they soon come to the water table, that is, the level of cold stagnant water in the soil; and cold water, however excellent in its place, yet stagnant in the soil, is as effectual a barrier to vegetation as would be a layer of any other poisonous substance. Here they not only stop, but soon become diseased, and even paralyzed, and when the hour of their extremity comes, *cannot* descend, and, consequently, the plants burn up; but remove this layer of stagnant water in season, and the roots descend freely, and find moisture enough. By drainage, we have also other means of security against drought in the fact above alluded to, that by the admission of air, the soil is gradually *deepened*, and also in the fact, that thus the capillary action of the soil is so brought into exercise, that water readily *ascends* from a water-table of four feet below the surface, and yields a constant and adequate supply. There are other points of interest connected with the subject of drainage, which I would be glad to dwell upon, but as many of them may be suggested by the report and statements which follow, will only remark here, that drains, if properly made, become of greater efficacy year by year, as the water gradually finds its way into them by channels of its own construction, by cracks once opened, by the passage ways left by earth worms, &c.; or as a Scotch farmer once phrased it, "the water gets into the habit of going there," and habits, as we all know, are more easily continued than broken up.

As for modes of construction, the main point is to secure a perfect channel or conduit. It may be done by laying stone in proper form, and filling above with a foot or so in depth of the same material broken small, after which the earth should be *trodden solid* over. Brush drains do better than none; I have some which have done good service for nearly ten years, and may last a while longer. But the mode which all experience declares best, as combining durability, efficacy, and cheapness, is to use *drain tile* made of clay, and burned as brick, of tubular form, with a sole to lie on the bottom, two or three inches in diameter of cavity, and about fourteen inches in length.* These are laid in continuous line on the bottom of the ditch, the joinings being covered with a piece of sod inverted, or shavings and straw, to keep out bits of earth while being filled in. Great care should be taken that the bottom be smooth and of a true inclination, so that water can run in it without obstruction, for as has been well said, "*the worst laid tile is the measure of the goodness and permanence of the whole drain*, just as the weakest link of a chain is the measure of its strength."

---

* I am happy to add, that these may probably be obtained in Portland, at moderate cost, the coming season, as a machine for the purpose has been obtained, and other arrangements made for their manufacture. They have hitherto been obtained mostly from Albany, N. Y., at high additional cost for freight; the price there being twelve dollars per thousand pieces, for tile of two inch bore, and eighteen dollars for those of three inch, which is about sixteen and twenty-five cents per rod in length.

As to depth, our preference is for four feet, as not only better, but as draining a wider space, properly, than three feet, in proportion to its cost. If we go deeper than four, the cost increases too rapidly, although they are probably of more efficacy in many instances.

One objection to two and a half and three feet drains is much the same as might be made to five inch ploughing where the ground had only been scratched an inch or two in depth before; it would be very likely that the operator might be satisfied with the results, whereas he ought to, and might easily do much better still. As to the distance between drains, fifteen feet may be as suitable in stiff clays as thirty or forty in those less retentive; in this and many other points pertaining to its practice, a sound discretion is to be exercised, and in case of extensive operations by a beginner, the assistance of some one who has experimentally investigated the whole subject should be secured. *

Although drainage is so generally neglected, we have in the State some instances of judicious and thorough work, one of the most extensive of which, within my knowledge, is upon the farm of B. F. Nourse, Esq., of Orrington, about six miles from Bangor. During the past season a committee from the Bangor Horticultural Society visited his farm for the purpose of inquiring into, and reporting upon his modes of operation, and their results. Having been present by invitation, at this visit, it is with the greater pleasure that I annex their report, which is as follows:

---

* "Munn's Practical Land Drainer," published by C. M. Saxton & Co., New York, price fifty cents, will be found of value to the novice, both as to the theory of draining and the details of its practice. In England there are those who make draining a profession, *i. e.*, draining engineers. Let there be a demand for the services of such here, and they will ere long be found among us.

THE EFFECTS OF UNDERGROUND DRAINING.

A Report to the Bangor Horticultural Society.

"Your committee, appointed at the annual meeting, to 'visit B. F. Nourse's farm in Orrington, to witness and report upon the effect of underground draining,' now submit for your consideration the following statement, from facts communicated by Mr. Nourse, and from knowledge obtained by personal inspection.

At the time of our visit in early summer, there was but one expression of satisfaction, not only from each individual member of the committee, but from all the invited guests, at the appearance of the farm, the buildings, fences, and crops. Although the season had been wet, yet the land was dry; the grass, grain, corn and trees were making a vigorous growth, being clothed with a richness of verdure which gave promise of abundant harvests. They all bore testimony to a careful, intelligent, scientific culture. Comparing this land with certain other portions of similar character in the vicinity, which had not received the same treatment, the contrast was very perceptible. The one was light, porous, arable and free from water; the other hard, lumpy, cohesive or miry. The one had been drained, the other drowned.

The whole farm lies upon the northerly inclination of a hill, several hundred feet above tide water, and extends to the summit. The super soil is generally clay loam with some gravel; the latter is present in some places, in sufficient quantity to constitute gravelly loam. Near the top of the hill, the loam rests directly upon a ledge of rock similar to that which crests the neighboring hills, and this ledge appears at the surface in a few spots of one or two rods extent each. When cleared and ploughed, enough loose stones and boulders of granite were exposed on the surface to build the external walls. It might be called a 'rocky' farm. With the exception of two places, each of about two acres, the whole farm was wet and 'springy,' unfit for ploughing or any other agricultural process until quite late in spring or early summer. Water is found everywhere quite near the surface. The deepest well on the premises, dug in the dry season of 1854, extends down only thirteen feet. The excess of water made it cold and rather discouraging for any crop except grass, and even this was too readily killed by the action of winter frost. The surface soil is underlaid throughout (except immediately on the ledge of rock,) by an impervious subsoil or hard pan of stiff clay, quite retentive of water.

The first draining was done in 1852, on a piece of about one and one-half acres, designed for a pear orchard. Thirteen drains fifteen rods in length, and twenty feet apart, were opened down the hill. The duct or channel was made by placing two flat stones apart on their edges, and letting the upper edges fall together; these were wedged in place, and filled above with six or eight inches of small cobble and broken stones. Inverted turfs, or boughs were then spread upon them to prevent the washing of earthy particles into the drain, and the earth was returned over all. These drains empty by bending at an acute angle into a main drain, which is at right angles with the general course of the former, following a more gentle inclination westward; and laid with flat stones, resting upon side stones, covered and filled in as the others. This main, discharges the water at the roadside, which has never ceased flowing from it, during the coldest winter weather. The land was then ploughed across the drains with six oxen, and the largest plough obtainable, opening a furrow twelve inches deep, in which followed a subsoil plough drawn by four oxen, cutting twelve inches deeper.

Upon this piece of land the frost comes out some days earlier, is later in fall, and of less depth in winter than in contiguous land undrained. The whole is dry enough for spading or ploughing, as soon as the frost is out in the spring, or within two hours after any heavy rain. During the drought of 1854, there was, at all times, sufficient dampness apparent on scraping the surface of the ground (with the foot in passing), and a crop of beans was planted, grown and gathered therefrom, without so much rain as will usually fall in a shower of fifteen minutes duration, while vegetation on the next fields was parching for lack of moisture.

The cost of two hundred and nine rods of drain, was two hundred and sixteen dollars, or little over one dollar per rod, equal to one hundred and forty dollars per acre. This was the first attempt; those afterwards made were quite as effectual, at much less expense.

In 1854, drains were laid two hundred and seventy-eight rods in length, costing two hundred and fifty dollars. This, however, includes an undue proportion of large and more costly drains for mains, needed to carry the surplus water a distance from the lands made dry, but available as mains for future small drains. Yet this is an average of about ninety cents per rod, three and one-half feet deep.

The small drains were laid with Sole Tile that cost twenty-four dollars and fifty cents per thousand delivered at the farm, (double the cost in Albany, where manufactured,) and the mains with flat stones, resting on side stones, filled in and covered as before described, the earth being returned easily with a two horse scraper. A field of one acre and two-fifths 'thorough drained' in this way, forty feet apart, three and a half feet deep, required one hundred and five rods, including main, and cost sixty-seven dollars and fifty cents per acre completed. This field was ploughed and subsoiled, each about ten inches deep, and a hoed crop taken off last season. During the heaviest rain no running or standing water could be seen on its surface. When your committee made its visit we were shown an acre of this field, which had been manured and partly ploughed for corn when a protracted rain came on. The seed being in soak and manure wasting, after the second day's rain it was resolved to prosecute the planting, and the ploughing was finished, the land harrowed, furrowed, dressed in the furrow, and planted in a drizzling rain, working easily and well. The corn all came up and has grown well; and still we did not see many clods or other appearances of wet weather working. Yet this was a clay loam, formerly as wet as the adjoining grass field, upon which oxen and cart could not pass on the day of this planting without cutting through the turf and 'miring' deeply. The nearest neighbor, a member of your committee, said 'if he had planted that day it must have been from a raft!'

In 1855 provisions were so high that such labor as ditchers rendered could not be cheapened in cost per rod; but an experiment was tried on a field of three acres, by laying tile drains, three and a half feet deep, four rods apart, leading into a stone main, all of them being covered and filled as before. An acre required forty-five rods—average cost, ninety cents per rod, or forty dollars and fifty cents per acre. More time is needed, with wet and dry seasons, to test the efficiency of drains so far apart.

This field was ploughed, but not subsoiled, last fall. It was in good working order in three days after the frost was out, two weeks earlier than the adjacent land was ready to plough. If not so thorough in laying the land dry and giving it such an open, porous soil as is desirable, its evident benefit at so small a cost per acre makes the experiment worthy of imitation.

Appended are some statistics of the cost, as ascertained, in draining this farm. These, however, must vary with circumstances, such as convenience of material, presence or absence of rock in the cuts for drains, price of labor, &c. No allowance is made for the removal of the large stone piles that encumbered these fields with disagreeable frequency, though it might be reasonably estimated as worth one-fourth or one-third the cost of the drains to get rid of these unsightly objects, by burying them forever beneath the reach of scythe, hoe, or even plough.

Cost of stone drains:

MAINS.

	Cts. per rod.
Digging 4 ft. deep, 2 ft. wide at bottom,	44
Hauling stone for channel,	15
Laying same,	12
Hauling and picking small stones for filling,	12
Sods, boughs or moss,	5
Returning earth with scraper,	12
	$1,00

SMALL DRIANS.

	Cts. per rod.
Digging 3½ ft. deep, 20 inches at bottom,	37½
Hauling stone for channel,	12½
Laying same,	10
Hauling and picking small stones for filling,	12
Sods, boughs or moss,	4
Returning earth with scraper,	10
	86

TILE—TWO INCHES CALIBRE.

	Cts. per rod.
Digging 3½ ft. deep, 6 inches at bottom,	33
Tile,	33
Laying same,	4
Stone fitting,	10
Sods, &c.,	2
Refilling,	6
	88

In conclusion we would represent that the concurrent testimony of all, in this country and Europe, who have tried this system of draining, proves that the following benefits are obtained: It obviates the bad effects of drought, because the roots of plants and trees can descend more deeply for nutriment and moisture; by removing excess of water, it renders soils earlier in spring, and allows work to be done sooner after rains; it averts the effects of cold weather later in autumn; it prevents the heaving of grass and grain in winter, and the frost from penetrating so deeply; it enables us to deepen the surface soil; it accelerates the disintegration of the mineral matters in the soil, and improves its mechanical condition by promoting the finer comminution of the earthy particles; it hastens the decay of roots and other vegetable matter; it allows the fertilizing gases of the atmosphere and the water from rains to percolate deeply and be deposited among the absorbent parts of the soil until the necessities of plants require them; it causes a more even distribution of nutritious matters among those parts of soil traversed by roots; by removing stagnant water, it prevents the cooling process of evaporation, and the abstraction of heat; it contributes to the warmth of the lower portions of the soil; it prevents meadows from becoming impoverished; it causes the poisonous excrementitious matter of plants to be carried out of the reach of their roots; it prevents the formation of acetic and other organic acids, which favor the production of sorrel and other noxious weeds, and it makes the surface soil of heavy lands light, and free from incrustation.

From the preceding facts, your committee are fully of the opinion, that this system of under ground draining, would be of great public utility; and we cannot too strongly recommend it to every horticulturist and agriculturist.

When these drains, with subsoil ploughing, shall be universally used, then will that desideratum be attained, 'two spears of grain will grow instead of one;' then emphatically, 'the wilderness and the solitary place shall be glad for them; and the desert shall rejoice and blossom as the rose.'

All of which is respectfully presented by

J. C. WESTON,
A. NOYES,
W. GOODALE,
OREN FAVOR,
E. P. BALDWIN, } Committee.

Bangor, Sept. 12th, 1856."

Subsequently to the examination reported upon as above, inquiry of Mr. Nourse, as to some additional points, elicited the following reply:

"GOODALE'S CORNER P. O.,
(Orrington) Oct. 11, 1856.

DEAR SIR:—In a report made by a committee of the Bangor Horticultural Society, (a copy of which has been sent to you) my experiments in thorough draining have been so well described, that but little is left for me to say in answer to your inquiries on that subject. All told, I have laid about three and one-half miles of covered drains, laying dry nearly twenty acres of land, most of it quite thoroughly. So far as time has afforded effects or results, they are all that theory claims, and as beneficent as those elsewhere obtained by the same means.

This *draining* is one of the processes of agriculture, which, once well and properly done, needs no repeating on the same land; and what is far more important, its benefits increase with the lapse of time. We may plough for the crop of one year, and it is no less needful to plough for the next crop; we may enrich the soil with manure, it will decompose and pass away, and again we must manure; and so with nearly all our crop-producing operations, they must be repeated at frequently recurring periods. But while our drains take off the surplus water at once, and thus show an immediate (and I think remunerative) benefit, they have begun a process of change and amelioration of the entire soil, which has no limit, at least until its depth is on a level with the drains.

By every working of the surface, and every deepening of the working, even by every rain drop that finds its way into the drains, their efficiency is increased, and that action extended which gradually but surely improves the depth and character of the soil. On the other hand, draining renders easier every working of the land, whether ploughing, subsoiling, or hoeing; whether by hand or other power. It makes any given quantity of manure do more service and last longer, and it applies far more of the fertilizing properties of the 'poor man's manure,' *snow, rain and air*, while preventing the wasteful habits of the two former in washing the soil.

Moisture in the soil is a necessary condition for the growth and development of ordinary vegetation; but there is enough in the water which is held by capillary attraction, in resistance to gravitation, while filtering through the soil. Any good soil is made more productive, and some sterile soils may be rendered fertile by frequent filtrations of water sprinkled upon the surface, and received in drains below. Rain or snow water, bearing ammonia, the wash from other lands, and still more, the drainage from cess-pools, street gutters, and the like, are fertilizing; but even the same water, gathered from the drain, and returned by a ram, or other apparatus, again and again, will at each irrigation dissolve and deposit food for plants.

It is essential that the water shall be *in motion*, and never be held stagnant, awaiting the slow process of evaporation. In this condition it is hurtful to all vegetation of the farm, and destructive, when saturating the surface for a long time.

Running water on the surface will quicken and brighten up the grass; it is fertilizing, then. But on tilled land, it wastes, carrying away the finer and richer particles of soil, and when flowing in large quantities, or rapidly, doing more harm than good.

Stiff, clayey lands, abounding in springs, or holding water in basin-like places, are said to be 'cold,' often 'sour,' and are necessarily unproductive. Some such places possess all the elements of a fertile soil, useless, or nearly so,—certainly profitless to cultivate, while the excess of water continues. Drain such lands, and you bring these elements into action, and convert the water from an ugly enemy into a kindly friend.

What is technically called the 'water table' is that line beneath the soil proper, where the top of the subsoil presents an impervious barrier to the desent of water by its gravity, and along which it runs slowly in the direction of the inclination of the land. In our stiff lands this is rarely more than one foot from the surface. From rains and melting snows the soil above the water table is saturated, and while in this state cannot be worked, nor would seeds germinate or plants grow. To remedy this, surface ditches are common, and so useful that it is a pity they are not more common; and ploughing the land in ridges or beds, with water furrows, also does some good; but both are, in the way of cultivation, imperfect, temporary, and requiring frequent renewal, in a long course more costly than under draining, and ought never to be allowed to take the place of thorough draining, where the latter is practicable; yet it must be admitted, are so good as to be urgently recommended when it is not practicable.

Effectual drainage can be obtained only by boring through the retentive strata or layers until one open and porous-like sand shall be reached, which was the Elkington method; now seldom used, except in special localities; or by lowering the *water table*. The skill and experience of English and Scotch proprietors, have found this is best done by opening ditches not less than three feet deep, (their efficiency increases with their depth) at proper distances apart, and laying therein water channels, with tiles, stones, bricks, brush, planks, or other materials,—preferring the most durable that were within reach—then returning the earth. Drains, so laid, lower the water table to a line nearly as deep as the bottom of the ditches.

Deeper tillage is then practicable and expedient, by deeper ploughing, subsoiling, and trenching. Gradually the soil deepens by conversion of the subsoil into properties similar to that of the upper soil, as the passing water deposits the matters it held in suspension or solution, and the atmospheric air which thus gains admission, does work beneath, akin to what it does in a common ploughed field left in fallow.

We attain other results; one of which is a gain of three or four weeks in the length of our season for working the land; being enabled to plough, and do it well, two or three weeks earlier than we can touch similar land not drained; and of course, to get our crops in better season; and we can plough in the fall, at any time when the weather is fit for man and beast to be in the field, up to the time when the ground freezes —an operation often interfered with, by too much water, until we had drained.

The soil is always in better condition for working: rain disappears into the soil as it falls; so that when the storm is over, hoeing or other work may go on without 'waiting for the land to dry.'

The ground does not freeze so soon nor so deeply; and the frost is out earlier in the spring, leaving the ground dry enough for immediate work, instead of lying in soak for weeks; pulverizing instead of clodding, when turned up by the plough.

Water passes from undrained soils mainly by evaporation—a refrigerative process, as any one knows who holds a wet hand up to the passing breeze. The term 'cold,' applied to our wet lands, is a reality. The heat of the sun's rays is used up in the conversion of water into vapor, and the earth cannot get warm. Draw off the water, and the heat penetrates the earth, seeds sprout, and plants grow. Our crops can be planted earlier, they will start quicker and more surely, and come forward faster, and be more fully developed and more perfectly matured—all other things being equal. Roots can strike deeper without rotting in stagnant water, or being poisoned by certain chemicals that stagnant water has a way of preserving there, and which draining takes away; and being deeper, could better withstand injury by drought. But here, we get another protection from drought. *Capillary attraction* is most powerful in the smallest spaces—that is, among the most minute particles lying close together. Draining, with proper tillage, tends to such fineness of the soil, and thus our drained soils hold water, and as it evaporates at the surface, get a fresh supply below, enough to sustain the crops unhurt through a long drought. The undrained clay lands near by dry and crack, and their crops wither, while yet on the drained land the want of moisture is not seen.

Draining saves and economises manures, but it cannot enable us to dispense with them.

It is found by experience, that a good manuring will do better service for a four years course of crops on drained land, than the same quantity for a three years course on similar land not drained, and leave it in better condition at the end of the course.

If we filter the water from a barn yard, through three feet of soil, it runs off clear water, leaving its manure in the soil. Solutions from solid manures upon or near the surface of drained lands, are carried *into*, not through the soil.

I have written a longer letter than I intended, yet only a small part of what ought to be said on a subject so important; have touched on many points, yet have done justice to none. Other matters demand my attention, or I would gladly try to give this a better advocacy.

Very truly yours,

B. F. Nourse.

S. L. Goodale, Secretary, &c."

W. D. Dana, of Perry, writes me as follows: "Under-draining has been practiced but little. The cost depends very much on the nature of the soil, muck or peat swamp being much easier dug than clay or hard pan. The results, of course, are such as must always be the difference between growing a plant in light, warm earth, or attempting to grow it with its feet in cold spring water. In one instance within my knowledge, fifty rods of drain and six hundred pounds of guano have given on one acre a crop of rutabagas, nine hundred bushels; ditto wheat, twenty bushels; ditto grass, three tuns, and the promise of three tuns the present year, where before draining, about five hundred pounds of swamp grass and flags used to be cut and carried out on haypoles; oxen could not then go on it, now a mowing machine and a pair of horses find no trouble."

The following experiment is related by Henry F. French, Esq., of New Hampshire, of a neighbor, Mr. Wm. Connor, Exeter, and is inserted here under the belief that it is not seriously damaged for our use on account of having been performed a score of miles or so, outside the limits of Maine, rather than within it.

"Mr. Connor procured four thousand drain tiles from Albany, most of them two inch, a few larger, and laid the greater part of them in 1855. His land is a hill side, of easy descent, of a slaty soil, with a clay subsoil in part, in other parts sand and gravel. Under the most of the drained land, he found a clay bottom, at about three feet depth upon which the water from the hill above flowed along, oozing out upon the surface, and standing, in wet seasons, in little pools, and producing grass so sour and coarse, that cattle would not feed upon it, and it grew up, and was mowed in the pasture where cattle are kept, for bedding. Mr. Connor put in his drains across the slope, at three rods distance apart, nearly parallel, and sixty rods long, mostly in straight lines. He carried the bottoms on a regular descent, without regard to the surface, laying none less than three feet deep, and in some instances cutting to the depth of six or seven feet, and united the whole in one main drain.

He considered it important to cut through the upper strata into the clay, to cut off the flow of water from the higher land. The general rule will be found to be different from this course in one particular. The best authorities advise, ordinarily, to cut the trenches up and down, and not across the hill-side. But the course adopted by Mr. Connor seems effectual for his purpose. His drained land has not been plowed, or changed in any way, except by the drains, but so great has been the effect in a single year, of removing the cold water, that the cattle have fed the ground closely, no water standing in the holes upon the surface, even a day after a heavy fall of rain.

Mr. Connor is well pleased with his experiment, and says that he had rather have the product of the land, without manure, for five years to come, than to have it, had seventy-five dollars' worth of manure to the acre been applied, without draining.

He has, for many years, attempted to drain his fields with stone drains, and pointed out a field where more than a hundred rods of them had been laid ten years. They answered well for a time, but of late have in part failed, and the cold water begins to do its secret work upon the crops. Like most of our best farmers, he feels the want of drain tiles at a reasonable price."

Mr. French also very pertinently answers the inquiry, why tiles are better for drains than stone or wood, as follows:

"We may answer briefly, they are better because they are more durable than any other drain, being, so far as ascertained, imperishable when properly laid. They are better, again, because mice and other vermin cannot live in them, or destroy them. They are better, because they drain more evenly than anything else. The labor of excavating is much less than for other drains, as the trenches may be very narrow. Finally, if the tiles can be obtained at the fair price of manufacturing, say twelve dollars per thousand, they are cheaper in the first cost than stone lying on the farm, because they are so much more cheaply laid."

It may be thought that undue prominence has been given to the topic of drainage. If so, my apology is a belief that we have in Maine a great deal of land, and much of it, the best we have, too, which, by the bestowal of no amount of labor or manure, can be made to develop its capabilities, until it is drained. It is a first step, which is necessary, in order to avail ourselves of improved modes of culture. We may plough deeply, and subsoil but without drainage the land soon becomes saturated, water-logged, and solid; seeds rot as before, instead of germinating; the little rootlets cannot penetrate so as to get food, or to resist drought. Manure is often spoken of as the one thing needful to farming, but without detracting one iota from its importance, it is pertinent to ask, of what avail is manure even, if some prior action be needful in order that we get the benefit of it? In short, the conviction is strong, that wherever it be necessary, it is *fundamental* to an improved agriculture.

Root crops.

The object of agriculture is to furnish *human food*, and it is palpable upon a moment's reflection that this end may be best attained by circuitous means, for if we aim simply and only at the production of bread, our lands will soon become exhausted and refuse to yield a subsistence. So, like a ship at sea with a head wind, the farmer must take an indirect course, and by a zigzag route, by roundabout ways, arrive at his point of destination. The aim of the good farmer is to give a wide berth to exhaustion and barrenness, leaving them as far out of his track as possible. It being found that animal manure is the most efficacious and available agency to accomplish this, the direct aim or immediate end sought by the agriculturist is, to produce the greatest possible amount (at least cost) of food both for man and beast, and he accordingly grows, not only wheat, but grass, for the more cattle he can feed the more manure he can command, and the more manure the greater the subsequent crops. Unlike the ship at sea with a head wind, whose course is as plain, and about whose steering there is as little of uncertainty as if the wind was fair, the agriculturist has the choice of a great many and differing routes by which to attain his end; and also one which has been very little traveled by the farmers of Maine, but which, if we may credit the testimony of good men and true, who have tried it, is really one of the most direct, surest and safest routes yet discovered, is the cultivation, on a large scale, of *root crops*.

The replies to the circular show that but little attention is given to their culture by the great mass of our farmers. They also show, that where grown, six to eight hundred bushels to the acre is considered a fair crop. In some cases a much larger yield is noticed. Assuming that these are equal in value to only one-third of their weight of the best hay, we have here the equivalent of six to eight tons of hay to the acre, and this certainly cannot be deemed an extravagant estimate. It will be seen that some statements appended make their value two or three times as great as here estimated, and so equivalent to twelve to twenty tuns of hay to the acre, but this is undoubtedly too high a valuation. So much for the amount of food produced. Now let us look for a moment at the cost of production, and the subsequent condition of the land. To grow good crops of carrots, beets or turnips, the ground must be ploughed deeply and made fine; must be manured well and kept clear of weeds. With the use of proper implements, as drills, horse-hoes, &c., the expense of cultivation need not be greater than for another crop of half its value, while the land is left in the best possible condition for the crops which are to follow, not only in regard to its mechanical condition, but as to its fertility; because as the roots ripen no seed, and obtain the larger portion of their nourishment from the atmosphere, the liberal manuring bestowed, and which is needful to give the young plants a good start, is in a great measure retained by the soil.

The late Daniel Webster, who, as a New England farmer, has never been excelled in breadth and comprehensiveness of views, and insight into rural economy, was once inquired of by a neighbor whose farm was "pretty much run out," how he might best renovate it. The laconic reply was, "grow turnips." The neighbor, not immediately perceiving any necessary connection between turnips and a renovated farm, inquired his reasons for such a recommendation. Mr. Webster replied that he could not then explain, as it would involve the whole economy of agriculture; but would only say, that to grow turnips he must plow deeply, manure well, and keep free from weeds; thus would his land be best prepared for the crops which would come after it; that the crop would be large upon any or all of his lands; that it would be best disposed of by feeding to his cattle in winter; so he must keep more stock, and being well fed, his animals would come earlier to maturity, and bring good prices. By this course, too, his manure would be greatly increased, and his farm consequently enriched.

In these remarks, Mr. Webster intended, doubtless, to enforce the value of root crops generally, rather than to extol the turnip to the disparagement of other roots. In some instances, the turnip, (Swedish,) in others, the carrot or beet, may best serve the purpose of our farmers, or prove best adapted to the soil of different localities, and of this we can only judge by the results of experiment.

The Swedish turnip is *the* root crop of England. It was originally cultivated, not so much for its intrinsic value, as for being the best follow crop before wheat; but its cultivation has so increased as to work an entire revolution in their husbandry, and now enables the land to support several times the amount of stock which could be supported under the old system of winter feeding on hay. Where successfully grown, (and the English farmers spare no amount of manure, or pains with weeding or otherwise, needful to insure success,) fertility and profit are sure to follow, as it perfectly cleanses the land, furnishes a large amount of milk, meat, wool, &c., for the market, and of manure to feed subsequent crops. At the present time, probably not less than three millions of acres are devoted to this crop in England alone, and it is alleged that its failure would be a heavier blow to the prosperity of the country than the failure of the Bank of England.

Valuable as this root is for New England, it is, for several reasons, less so, than for old England. We cannot feed it off the field in winter,* but must harvest and house it; nor is it so well suited to our climate, where deluge or drought alternate, as where "the rain has no definite beginning nor end."

What we especially need, is a crop which shall be for us what the turnip is for England. Is it the turnip? Is it the carrot? Is it Indian corn, (both as kernel and leaf—for grain and for fodder) or is it something else? and if so, what is it? No greater service can be done for our agriculture than satisfactorily to solve this problem.

The following remarks on root culture, furnished by an intelligent practical farmer of Oxford County, will be read with interest:

"The cultivation of roots of any kind for stock, has yet received but little attention from our farmers. Indeed, few cultivate any kind of crop for their stock especially, except hay. There are a few, however, who begin to understand something of the value of root crops for their animals, and show their faith by their works.

Believing, as I do, that Maine was made especially for a stock-growing country, I feel that the importance of root culture cannot be too strongly urged. If this faith is well founded, then stock-growing ought to constitute the leading business of our farms, a business to which all other farming operations should be subordinate and tributary. Everything on the farm should be conducted with reference to this business. When our farmers view the matter in this light, and come to understand the true value of roots for stock, they will not deem it a waste of time and money to grow them and other things especially and exclusively for their use, as very many of them now seem to do; but they will understand that it is just as necessary and profitable to cultivate roots and other feed especially for stock, as it is to grow hay, and as much a matter of economy.

Of the value of roots, especially the carrot, there seems to be no doubt, among those who have tried them with any sort of thoroughness. Experience shows, that used with straw and poor hay, cattle will do better than on the best of hay alone. They supply an element in their food that is not only peculiarly grateful, but highly beneficial, and promotive of health and vigor.

---

* This practice it may be noticed here is rapidly being abandoned—giving place to stall feeding.

The carrot has a special value for horses fed on grain. The experience of the most careful and observing grooms attests, that the quantity of grain may be reduced one-half per day, by substituting for it an equal weight of carrots cut fine and mixed with their grain when fed, and that they will maintain their health and condition better than with hay and grain alone. It is important to observe, that the grain and carrots should be fed *together*, and the reason is, that they render the digestion of the grain more complete and perfect than it can be, even under the most favorable circumstances, without them. This is one reason why horses do so much better with the two together than with either alone, no matter how great the quantity. The pectic acid of the carrot helps the digestion of the grain.

But we need not spend time to argue the value of roots for stock, at least so far as the carrot is concerned, for among those who have tried them, there is no difference of opinion. The case is so plain a one, that the most careless observer cannot fail of discovering the fact, on the smallest experience, even.

In regard to the rutabagas, there seems to be great diversity of opinion, as there is with reference to the whole turnip tribe. Most farmers in this section esteem them very lightly, as food for stock. It is not so in Europe. There they feed and fatten, not only cattle, but swine, on them. And all kinds of turnips are raised in immense quantities, for this purpose. And we are inclined to the opinion, that one great reason why they are not more highly esteemed among us is, that they are fed in an improper manner and condition, and in insufficient quantities. In England, turnips are cut into a fine ribbon, or grated into a fine pulp, and mixed with cut feed, straw or hay, usually with straw, and are given in considerable quantities. Among us, the usual way of proceeding is, with a shovel, on the barn floor, or in a box, to cut up one or two turnips to an animal, into pieces as large as they can possibly get into their mouths, and thus feed them out. That they should do them much good, given out in such a condition, and in such quantities, ought not to be expected. Indeed, no *man* can look on and see the great efforts the animals have to use to masticate them, but must feel that it will require all the nutriment they get to supply the waste caused by their *labor* in eating them!

That any kind of turnip has not as much nutriment as a carrot, is well known to all intelligent agriculturists; but even the least nutritious sorts of turnip, if properly fed, with dry fodder, are far better for animals, than nothing that is green. They will keep in better condition for it. Every intelligent farmer who has made any experiments with them, knows that animals may not only be kept alive with them, but if given in sufficient quantities, they may be fattened even on the common flat English turnip.

But there are considerations that should induce the cultivation of roots, additional to their value as food for animals. They are broad-leaved plants, that derive a large proportion of their nourishment from the atmosphere, and are, therefore, not exhausting crops. Indeed, land will improve under the cultivation of the carrot in particular. The same is true of the beet. Besides, all roots that deeply penetrate the earth, are a kind of underground laborers. They not only loosen the soil and subject it to atmospheric influences, but they act on it with a chemistry peculiarly their own, to elaborate food not only for themselves, but to prepare it for other plants.

This is one great reason why the cultivation of roots plays so conspicuous a part in English husbandry. It has been said that turnip culture is the English farmer's 'sheet-achor.' From the difference in climate between this country and England, that being proverbially moist, and ours subject to frequent and sharp droughts, this crop may not be economically or judiciously made to play so conspicuous or prominent a part in a system of rotation in crops as in that country. But that turnip culture for the feeding of animals should occupy more attention, and that economy and good husbandry require that every farmer should raise a few hundred bushels of rutabagas in particular, there can be no doubt among intelligent and practical men. Nor can it be doubted, that root cutters should be on every farm, properly to prepare them for feed, along side of hay cutters.

But whilst a variety of kinds of root should be cultivated, it is little to be questioned, that in a dry climate like ours, the carrot should occupy the most prominent place, it being peculiarly calculated to withstand the effects of the sharpest drought. It is also a very productive crop when well cultivated. Its superior value as food for animals, and especially for horses, eminently entitles it to this position."

An esteemed correspondent, in Somerset county, writes as follows:

"Rutabagas and carrots are now cultivated, to some extent, by nearly every farmer in these parts—from one-eighth to one acre to a farm. The amount raised has been constantly on the increase, and becoming more general for some five years. The seed is put in with a seedsower, and as there is but one in this immediate neighborhood, I have had a good chance to know the progress made in this branch of agriculture. I should think it would be a fair estimate to set the ground sowed to turnip and carrots, this year, by this one machine, at one hundred acres. A man will sow one-quarter of an acre in from one to two hours. Beets are sowed less now than five years ago. They are not as sure to come and not so handy to use as the carrot, which may account for their disuse. The yield of carrots will be found to vary from three to eight hundred bushels per acre, and turnips from five to twelve hundred bushels; more, and less than this yield, of course, sometimes, in extreme cases. The carrot requires old, mellow and rich ground, made fine and deep by ploughing and working well with plenty of fine manure, as good as that used for corn in the hill. If the manure is scanty it should be put into the drill, two furrows turned on and raked smooth, then run the sower twice, about ten inches apart.

Turnips prosper best on *sward ground;* indeed, they are usually ruined by the worms if put on old ground, such as is fit for carrots. In this respect the farmer can raise turnips better than carrots, as he can prepare worn out mowing for a crop of grain and grass seed the next year as well with turnips as with corn, and thus be restoring the general condition of his farm. Carrots require most labor in hoeing, and unless sowed early this labor comes in haying time, which it is desirable to avoid, besides the weeds grow with more rapidity late than early. Carrots, then, should be sowed early, say middle of May. Some sow in the fall with good results. No man should be without a patch of one or both of these vegetables. To fatten hogs, horses, or cattle, the carrot is worth twice as much per bushel as the turnip; while to feed to cattle with straw or poor hay, a few for a solvent and loosener, the turnip is quite as valuable. As to the value, then, of each, compared with hay, it will depend much on the use to be made of them, whether they are to be fed sparingly, as a regulator, for which use they are worth far more than their intrinsic value or chemical elements of nutrition would indicate, or fed profusely, as a fattener of beef or pork. If I were to be allowed one bushel to ten head of cattle fed on straw and coarse fodder, per day, I should choose the turnip; if I were to feed on half hay and the balance turnips or carrots, I should by far prefer the carrots, say two bushels to three of turnips.

With us, farmers and teamsters, who have used carrots for horses, rate them the same as oats in value, while horses unused may, with advantage, have more given to them than of oats, and less hay. It is now considered settled that the pectic acid of the carrot enables the horse to digest the hay used with them far better than used with oats. The same is true of turnips, but to a less extent; and the effect of this is less on cattle that chew the cud, than on the horse with single and low powers of digestion. Making the variations above indicated, I shall set down carrots worth as much per ton as hay, and turnips two-thirds as much, though either may be of greater or less value, according to the amount used, compared with the hay used with them, whether it get above or below a certain ratio."

Some brief statements are appended chiefly to show the estimate which prevails in different portions of the State as to their yield and value:

FROM WALDO COUNTY.

"Carrots, rutabagas, beets, &c., are cultivated as field crops to some extent, by most farmers, and is increasing as the potato crop decreases. Carrots are much more cultivated than either of the others. Average yield of carrots per acre, from six to eight hundred bushels; beets less, and turnips more uncertain. Their value, when compared with hay is, that when hay is worth fifteen dollars per ton, carrots are worth thirty cents per bushel; beets and turnips some less."

FROM YORK COUNTY.

"Carrots are raised on a small scale. Farmers raise from fifty to three hundred bushels. Mr. Philip Libby showed me a patch of land on which he stated he raised three hundred bushels. He thought the piece contained one-third of an acre; but I thought it would fall short of that. He considers them more valuable than the best English hay, weight for weight. Mr. Samuel L. Smith thinks one thousand bushels may be raised per acre, and he considers them very valuable for stock, much superior to rutabagas.

I raised seventy-five bushels last year, from about twenty square rods in my garden, and I think I should have had a hundred, had not the rust got hold of the tops before they attained their full growth. I feed them to my stock with my poorest hay, straw and corn-fodder; and I think the cattle do better than on the best English hay without them. Beets and rutabagas are not much cultivated for cattle. They are thought to contain less nutriment than carrots, and when fed to milch cows, are apt to give a disagreeable taste to the milk."

FROM JOSEPH PARSONS.

"Rutabagas, beets, carrots, &c., are not cultivated in Parsonsfield, as a field crop, to much extent. Carrots and beets are considered to be worth as much per tun as English hay. Rutabagas are not esteemed so highly as food for stock."

FROM PENOBSCOT COUNTY.

"Some few of our people cultivate roots to some extent, as field crops, except beets. Rutabagas and carrots yield on the average, about five hundred bushels to the acre. Their value as compared with English hay, to be fed with hay or straw, eighty bushels of rutabagas, or fifty bushels of carrots, are equal to a tun of hay."

FROM CUMBERLAND COUNTY.

"Within the past three years, considerable has been done with regard to beets, rutabagas, and especially carrots. The quantity raised is increasing. The average yield not known. The value last fall was twelve dollars per tun. English hay fourteen dollars per tun."

FROM CHARLES HUMPHREY, NEAR PORTLAND.

"Rutabagas, carrots and beets, are here cultivated to considerable extent, as a field crop. Large quantities are sold in Portland, for from ten to fourteen dollars per tun, for horses and other purposes; but those farmers who feed them out to stock, consider them about equal to English hay."

FROM S. P. MAYBERRY, CAPE ELIZABETH.

"There are some farmers here who raise forty tons of carrots. Average yield per acre, about nine hundred bushels. Price last year, ten dollars per ton.

This year I imported from Europe, a few packages of 'Golden Beet Seed.' The beets cook finely. I should think the product per acre would exceed that of carrots by one-third. It is said of them, that they make more milk than either meal or carrots. If any one wishes to try and see for themselves, I will furnish the beets to them to set out for seed, if they will give the result through some medium, that agriculturists may learn whether it may be cultivated with profit as a field crop for cattle."

FROM WILLIAM BUXTON.

"All farmers in North Yarmouth cultivate some roots for stock, but they are not often manured. They probably yield, say from five hundred to a thousand bushels per acre. Worth about twenty cents per bushel. A great difference of opinion exists as to their value as compared with hay."

FROM FRANKLIN COUNTY.

"By some means or for some reason, carrots have taken the lead in root culture among us, excepting the potato, and are highly esteemed, and fed to all kinds of stock, with straw and other coarse fodder. It is believed, that one peck, with plenty of straw, for a grown animal, is equal to the usual daily allowance of good hay."

Manures.

There are few subjects which claim a greater degree of consideration at the hands of the farmer, than that of manure. I am aware that in some of the newer portions of the State little or no attention is given to it, from the fact that the virgin soil yields abundantly thus far, without its application, but all so situated should profit by the uniform experience of those who have preceded them in the culture of such lands, and although no immediate necessity be felt, they should husband all fertilizers with care, and so leave to their children an unexhausted inheritance.

Plants must have food. Vegetation annually appropriates to itself, and removes from the soil, a portion of the nutritive principles therein contained, and if they be removed without compensation in some way, barrenness will ensue.

Upon the facilities which the farmer may be able to command to secure an adequate supply of food for his crops, his success must in a great measure depend.

Manure is a term of broad application. It was formerly confined chiefly to the excrements of animals, but now has a wider signification, and may be understood as embracing any animal, vegetable or mineral matter capable of improving and fertilizing the soil, or of correcting its faults and supplying its defects. Whether artificial fertilizers may or may not be profitably employed, is of far less moment for us to understand, than how to make the most of home resources; the true policy being to increase the productiveness of the farm from within itself. To accomplish this, every source of fertilizing material upon the farm should be made to contribute, and care should be taken, that nothing be wasted. Not only should the solid excrements of animals, which too often is the sole dependance of the farmer, be properly cared for, but special efforts should be directed to the liquid also, which are not only more exposed to waste, but possess a superiority over the other, which renders their loss irreparable. An eminent agricultural writer says: "When it is considered that with every pound of ammonia that escapes, a loss of sixty pounds of corn is sustained, and that with every pound of urine a pound of wheat might be produced, the indifference with which these liquid excrements are regarded is quite incomprehensible." Another says: "The quantity of liquid manure produced by one cow annually, is equal to fertilizing an acre and a quarter of ground, producing effects as durable as do the solid evacuations. A cord of loam, saturated with urine, is equal to a cord of the best dung. If the liquid and solid evacuations, including the litter, are kept separate, and soaking up the liquid by loam, it has been found that they will manure land, in proportion by bulk, of seven liquid to six solid, while their actual value is as two to one. One hundred pounds of cow's urine afford twenty-five pounds of the most powerful salts which have ever been used by farmers. The simple statement, then, in figures, of the difference in value of the solid and liquid evacuations of a cow, should impress upon all the importance of saving the last in preference to the first."

Excrementitious matter, whether solid or liquid, is by no means our only source of food for plants. Almost every farm possesses an indefinite, and often a most abundant supply, in the deposits of decayed vegetable matter known as muck or peat. This, to be sure, in its natural condition, is not readily available by plants; they would relish and thrive upon it about as well as we would on raw potatoes, but nevertheless, the food is there, and only needs due preparation to make it both palatable and nutritious. Muck or peat is also of great value, and almost indispensable as an absorbent of liquid manure, and of the gases generated during decomposition. In this way it not only proves a most effectual and economical means of preventing waste, but is itself, in so doing, modified or changed so as to be converted into valuable and available manure. Muck, treated with ashes, is found to do exceedingly well. Another mode of treating it, which has many advocates, is, to slake quick lime, with a saturated solution of common salt, and mingle with the muck, in the proportion of one cask of lime to a bushel of salt, mixed with a cord of muck. Thus prepared, it is not a simple mixture of lime, salt and muck, but during its preparation as stated above, a decomposition of the salt takes place, alkali is liberated, equivalent to the ashes used in the other case, and by its action the vegetable food in the muck is rendered soluble, and thus made available to plants. Other and varied sources of fertilizing materials, are within the reach of every farmer, many of which will be found alluded to in the statements appended, and so may not need comment here; but I cannot forbear to mention one resource in which Maine is favored beyond any other state of the Union, viz: the ocean. The "abundance of the seas" is barely beginning to be converted to the uses of agriculture. Some rockweed or kelp, and a few fishes have been gathered, but when we think of what has gone into the sea, from the land, and what we know of its composition, its contents and its productions, we cannot but deem it a vast storehouse of untold wealth, as yet scarcely drawn upon, but which will some day enrich the earth. In developing these riches, the "Dirigo" state should be good for its motto, and take the lead, not only, as now, by building more ships than any other, to skim its surface, but by plunging into it, and drawing thence, in some form or other, that which shall amply compensate for what, in ages past, it has robbed the land; and it would be well, too, if it could be put into a form so portable as to be easily carried as far into the interior as it was originally washed from. The manufacture of "fish guano," as recently attempted, seems to indicate something of this kind, as both practicable and possibly, not very far distant. *

An intelligent correspondent, writing from one of our seaboard towns in answer to the question, whether any special means are taken to increase the quantity or improve the quality of manures, says: "Gathering muck, salt marsh mud, rockweed, fish and offal of every kind, are the means usually resorted to. Rockweed is the principal resource. Mixed with stable manure, it not only increases the quantity, but improves the quality. Spread on grass, it is a powerful fertilizer, particularly in wet seasons. Bones are gathered, horn-piths, &c., and of all manures for immediate effect and for durability, nothing which I have seen equals crushed bone. *We have fifty miles of seacoast in our town*, including the coves and indentures, and on two sides, a bay abounding in fish; in almost every large cove, a fish weir, where are taken any quantity of herrings, flounders, sculpins, lobsters, and big and little fish generally. Now with this fifty miles of rockweed, and this abundant supply of fish and offal, what is to hinder us from making our farms as productive as we wish? Why need our young men go to the far west?"

When we consider that this is only one out of more than seventy-five towns in this State, which are washed by the ocean, or other bodies of salt water, and in all which marine manures may be had without going beyond their own limits, it will be seen both how great are our facilities, and how inexcusable any neglect to profit as we may by them.

There is no complaint so general among our farmers as the want of manure. It is the stereotyped excuse for poor cultivation and is made the scapegoat for all sins of omission in farm management. And yet the replies to the circular express the opinion that a loss of at least fifty per cent., is suffered by most farmers, either in the amount or value of the fertilizing materials at their command. It is believed that our husbandry is not such that we can afford to lose this; and it is gratifying to learn also, that interest is generally awakening on this most important subject, that efforts are being directed both to the saving, and to the conversion of materials hitherto neglected, to the uses of crops. The inexhaustible supplies of meadow mud, peat or muck, are being drawn upon and prepared in various ways for application. This is by no means uniform in its composition or quality; some being made up of the wash of higher lands, with abundance of leaves from a hard wood growth, with the remains of frogs, &c. Such may be immediately applied to the land to advantage, and is often found of as great value as barn yard manure. Another style of muck seems to have originated mainly from the decay of mosses and the leaves of evergreen or resinous trees. This is the least valuable of all, and especially if, as is sometimes the case, it be impregnated with pyrites or other form of iron ore, in which case it sometimes becomes corrosive upon exposure to the air, and unless corrected with lime or other alkali, is actually pernicious to vegetation. It is more usual, however, to find such as is formed in large measure of coarse water grasses, and other aquatic plants mixed with leaves, branches, and trunks of trees gone to decay, with some mould and mineral matter washed from the hills, often of a fibrous texture, being filled with minute roots. This is so much benefited by the simple action of air and the frosts of one or two winters, that it may be used with good results, but its value is greatly increased by the addition of ashes, or of alkali in some form, or by being used as an absorbent of liquid excrements.

---

* It may not be amiss to remark, that the immense deposits of guano in the Chincha Islands and elsewhere, which now add so materially to the production of the earth, are entirely of marine origin.

With regard to the application of manures, little has been elicited beyond the fact that it is usually applied in an unfermented state. This may be the better way, where suitable absorbents have been intermingled during its accumulation, and where permanent fertility, rather than present benefit is aimed at; but for the immediate use of a crop, that which has been properly composted is doubtless far more efficacious.

Regarding what are called special fertilizers, as gypsum or plaster, guano, poudrette, tafeu, super-phosphate of lime, &c., but little of interest and nothing reliable as a guide to farther use, has been obtained. They have been used to some extent in various parts of the State, and with very diverse results, but it is never safe to deduce principles or even rules of action from either success or failure in experimenting with manures, until after repeated and careful trials, and when *all the conditions affecting them* are clearly apparent.

In answer to the inquiry, what per cent. increase of manure may be saved or made on our farms by reasonable care, a practical farmer in Washington county replies: "*One hundred per cent. at least.*" The means which I have seen in operation on one farm, for this saving and increase of value, are, first; a thoroughly drained barn cellar, so that no drop of water can enter it from the outside; into this is carted during the summer, a sufficient quantity of dry muck; a portion of this is from time to time put under the cattle stalls till fully saturated, then renewed; into this cellar is thrown whatever stray droppings may at any time be found in the yard during the summer; the next a sheep house, thoroughly drained as the barn-cellar, the bottom of which (no floor) is kept constantly covered, summer and winter, with about six inches of *dry* muck. This sheep house opens into the sheep pasture, and during the summer the sheep have free ingress and egress. The result is, that in hot weather, they spend the most of the day there, instead of seeking in vain for protection from the flies, by the sides of fences, &c. The accumulation from this source is not inconsiderable—all the liquids being absorbed by this dry muck. The hogs, also, contribute their aid in wetting a portion of it; and the poultry house, also, adds to the accumulation. This farmer's first aim is to get rid of all water that has not passed through some animal—as he says rain water makes a poor ingredient for compost.

There is plenty of swamp muck or peat in town, but it has not been extensively used here. The plan above described, is practiced in a neighboring town with the most satisfactory results.

Guano and super phosphate of lime, have been fairly tried—and in my own experience, are equal to stable manure when applied in such quantity as to equal the cost of cartage of the stable manure. Plaster produces no effect, nor can I see that lime does."

A farmer of Cumberland County, replies to the same inquiry: "Certainly not less than a hundred per cent., and I am happy to add, that of late, a more general interest is felt on the subject of manures. Barn cellars and sheds are coming into use daily. It is admitted by all who have used them, that a cord of manure from a cellar is worth at least one and a half or two cords which has been exposed to the sun, air and rains; and with little expense the quantity can be more than doubled by the use of a cellar, and of absorbents. We have used manure, generally, in a crude state, but a different system is being adopted, that is, composting and fermenting before being used. Guano and other special fertilizers have hardly been fairly tried."

An esteemed correspondent, near the centre of the State, writes as follows:

"To improve the quality of manure, many of our farmers have constructed barn cellars, others sheds, to cover the manure from the weather; and have some way got the notion that they have made some improvement thereby, though I think their views are not very definite on this head. Sheds under which horse manure is thrown to lay some months, not mixed with other material, or worked by hogs, or otherwise, I deem a nuisance. Such manure is very thirsty and needs much water while fermentation is going on; and if it does not come to the air so as to imbibe moisture, it should be added artificially or from the eaves of the barn. Comparatively cold manure, such as that of neat cattle and of the hog, should be mixed with the dry and hot, like that of the horse and sheep, and be worked together, else to exclude water wholly, is only a damage.

Most of our farmers now use muck to some extent in their yards and pens of swine, as a divisor and absorber and cooler and moistener of the other manures, and with good effect. This practice is becoming general quite as fast as could be expected, especially as there is yet considerable vagueness in the minds of many, even of the majority, as to the precise utility of the thing. How an article worthless as a producer where it lies, and still worthless when deposited a load in a place in the open field as is often the case, can be of itself of great value in combination, is perhaps more than could be claimed of them to know. Precisely how the soil is affected by acid or alkali, organic or inorganic, animal or vegetable elements, is what they do not care to know, but leave to the fools who make books, and the greater fools who read them. But this headstrong prejuduce is fast yielding to sincere and earnest inquiry, which needs to be rightly directed.

Stable manures are generally used in a crude state, though I think nine-tenths of our farmers would readily admit they are much better composted. This is their *impression*, but they have no definite knowledge on the subject in which they put full confidence, nor do they know how to do it, nor is it easy for them to find the time necessary for the work. For myself I have for some years composted nearly all coarse manures, so as to use up each spring everything in this shape, applying muck in all the places when the manure had been scraped clean to begin the next year's stock.

I am confident that the value of manure in this neighborhood, and as far as my observation has extended, in this State, might be *doubled*, with reasonable care, and with small expense; and with a profitable outlay, much more than doubled.

What is the present condition of our farm arrangements in this respect? In many cases a large wet barn yard has a powerful current of water in every rain of much magnitude, thoroughly drenching it into some swamp or running brook near by. The hog yard is on a steep side hill or exposed place, full perhaps of rocks and bushes, and has been so for years. The privy may, as I have often seen it, set over a brook, or might as well. The sink is a nuisance to the family. The suds are poured out to waste; and sometimes the ashes are sold for a York shilling per bushel, costing half of it to market them,—the farm from which they were hauled casting after them a lean and hungry look. The chip yard, it may be, has not been scraped up for twenty years, or has been emptied into the highway to dry up some wet spot, which in the end is made worse. Such, in brief, is what meets us, not everywhere, but *generally.*

Some of these men no doubt may be thinking of sending to Peru for guano, or some where else for some dear-bought and far-fetched fertilizer. Shame on them!—their brains need some kind of stimulating application quite as badly as their lean and impoverished soil. Instead of this or the like, the sink, the suds, and the privy, should, if possible, be discharged by a common sluice into the deposit of the stable, and that under cover and accessible to the hogs, to be by them worked over, and mixed with from ten to twenty times the bulk of muck, if accessible, sea weeds, leaves of the forest, sods from low places or the road side, or worthless vegetable matter of any kind, which the farmer can procure the cheapest. Ashes, chip manure, saw dust, spent tan, old plastering, and the like, should all contribute if handy to make one common mass, well mixed and elaborated, fermented and saturated; and when applied, especially if put in the hill, it should be made fine,—a point too often neglected. Intimate union and reciprocal interchange of air and moisture with the soil is thus secured, which to the present crop is of infinite advantage. These places may be supplied with muck and the like, separate, if they cannot be brought together. Swamp muck, though not so plentiful in this town as in some towns around us, is still quite abundant. Our farmers, on an average, would not have to haul it more than a hundred rods, though some would not be able to get the best quality. Muck differs in value, I think, according to the difference of material of which it was originally made; that formed from the waste of hard wood growth must be of more value than that formed from soft wood. The latter has neither the compactness and solidity when dry, nor the chemical elements of vegetation of the former, while in like situations it is, from its very composition, more abundantly *acid*. All muck that I have examined is more or less acid, from its long seclusion from air, heat and frost. This must be corrected before it is fit to be applied to any soil not *powerfully alkaline*. Hence, composting with ashes or lime, is the readiest mode of fitting muck for use, though much may be done by long exposure in open air to heat and frost, and hence it is that owners of muck bogs would find it to their great advantage to drain them thoroughly; uncover by burning or otherwise the surface, and the material would not only be more readily hauled at any season of the year, but would be more nearly ready for use. Muck in this condition, I have known hauled immediately to the field, and used to decided advantage in the hill for potatoes, not much behind good manure; not often for corn, though I have heard of cases of the like, but I have known others when it was a decided damage. The great practical utility of muck is in combination with the manure of animals, and it is in this form that it is beginning to be used to some extent, by nearly all our farmers, and with greater or less profit, according to its quality, and the skill of the user. We have no peat in this region.

Guano, super-phosphate of lime, and poudrette, have not been used to any considerable extent, but plaster has been used quite extensively. The result is sometimes very marked, sometimes not at all visible. The conditions of success or failure are not *well* understood by any one. Some general conclusions are arrived at, such as these: that plaster is more useful on clay ground than on sandy; more beneficial in a dry season than in wet; more useful on sward, as when sowed to improve the grass crop, or as applied to potatoes on sward, than on old ploughings. Though it has been long used, it is not now used with confidence, or definite expectation of any given result, or any sure rate of profit. Agricultural science ought to render this matter more definite and plain to whoever may care to know—what it is worth for this soil, and what for that—what for this crop and what for that—and why, are inquiries more easily made than answered. Is it the lime, or is it the sulphuric acid of which plaster is composed, that stimulates the crop, or is it both combined? Clay soil usually abounds in potash, and also lime, so that we should infer that the slight part of lime in plaster must be nearly thrown away, especially as plaster is found equally beneficial on ground when an application of lime has no effect.* If this is found to be so, cannot the fifth part of plaster, namely, the sulphur, or sulphuric acid be made available in some other combination equally advantageous, and not as costly, and of less expense of transportation? Why cannot the State do something to solve some of these questions?"

---

* See Address of Dr. Lee, of the Agricultural Department of the Patent Office.

FROM JOSEPH PARSONS.

"There are no special means adopted by the farmers of Parsonsfield, to increase the quantity of manures produced on our farms. Stable manures are generally used in a crude state. Fifty per cent. increase in the value of manures, might be saved or made on our farms with proper care. If our stables were properly constructed, we could, with very little care, save the urine from our animals, which is a very important object. I consider the fertilizing properties of the urine of our animals, equal in value, to one-half their solid excrements. Our stables should be so constructed, that the droppings of our animals might be thrown into a cellar, under where they stand. Then by covering the bottom of the cellar with some absorbent matter, such as peat, muck, leaves from the forest, or soil, we might easily save the urine. Manure of all kinds should be kept housed in some way, until a proper time to be carted out for use. A large portion of our manure that is suffered to lie in our barn yards, exposed to the rains and the action of the sun, is lost by leaching and evaporation. Some people object to barn cellars, on the ground that the vapor which rises from the manure, goes up into the barn, and injures the hay. This may be very easily prevented. If the cellar is under the whole barn, there may be a partition between the manure cellar and the other. Then, if the manure cellar is properly ventilated, the foul gases which rise from the manure, will pass out, and the hay will keep just as sweet as though there was no cellar under the barn.

Swamp muck abounds in many places in this town, but has not been extensively used.

Guano, super-phosphate of lime or poudrette have not been fairly tried. Plaster has been generally used. We consider it good economy to use it on our dry lands. In raising Indian corn on dry land, two and one-half bushels of plaster per acre, dropped in the hill, is equal in value to three cords of barn-yard manure spread broad cast, for the present crop."

FROM CHARLES HANNEFORD.

"The town of Cape Elizabeth is so favorably situated, in regard to manure of different kinds, from the sea and the city of Portland, that the farmers have paid but very little attention to the compost heap. As a large portion of the town is bounded by the sea shore, the farmers in the vicinity haul great quantities of sea-weed on their farms. It is an excellent manure for crops. It is spread broad cast and ploughed in. Stable manure is generally used in a crude state. A large quantity of manure is hauled from Portland. I am satisfied, that one-fourth of good loam, well mixed with stable manure, for crops, is preferable to the stable manure alone.

Swamp muck and peat abound in any desirable quantity all about town, and it has been used to some extent, with the most happy results; and farmers are beginning to appreciate it as it deserves. By hauling it into the barn-yard, and allowing the cattle to yard on it, at the rate of one-half cord per head, and put one-half cord of leached ashes—unleached would be better—to two cords of muck, and mix it well. The best way is to spread it in the yard, and let the cattle mix it, and it makes one of the best manures for corn that can be got up.

Take an equal quantity of muck or peat, and sea-weed or rock-weed, and mix well together, by throwing them into a snug heap, and allow it to remain long enough to pass through a state of fermentation, the sea-weed disappears and the heap is left in a finely pulverized state. This is the best and cheapest manure I ever saw. I have seen the finest crops of corn, potatoes, and cabbages raised on it, that I ever saw grow, and it is good for any crop. Muck is good to put under the stable, privy, sink-spout, and about the door-yard, to catch the soap suds and all other slops, for it is a great absorbent. Let it lie one season, and then collect it together and add one-tenth part of leached ashes, and it makes a first rate manure for wheat and other grains, and is excellent to spread on grass lands, for a top-dressing."

FROM WILLIAM GREGG.

"Ignorance to a great degree prevails here, as elsewhere, in regard to the value of substances to be converted to manurial purposes. There are some attempts at composting, mostly with rock-weed and muck, and barn-yard manure. Stable manures are mostly used in a crude state.

Manures might easily be increased one hundred per cent., by having barn cellars, or other receptacles, in which to collect the thousand and one things that might go to make up the compost heap, such as refuse bones, ashes, weeds, leaves, scrapings from the roadside and ditches, muck, night slops from the house, soap suds, &c., &c.

On many farms there are deposits of muck, that have been used to some extent. It has generally been used in a crude state, or merely mixed with rock-weed. The results, perhaps, have not always been so marked and apparent as to secure perseverance, although the soil was permanently improved thereby.

Last year, the first super-phosphate was used, except a very small quantity the year previous. Eight tuns were sold and used in lots varying from one hundred and fifty pounds to half a tun, mostly applied to corn and root crops, and in amount varying from one hundred and fifty to four hundred pounds per acre, generally in the hill, in addition to other manures. The sale of Peruvian Guano, this year, has been twelve or fifteen tuns. The effect remains to be seen. If possible, I will communicate the result as soon as known."

FROM ORRIN FULLER.

"In Lagrange, special means are used to increase the quantity of manure, such as building barn cellars, bedding horses and cattle with straw and coarse litter, the use of muck composted or hauled out and exposed to the frost of winter; and we are beginning to realize the value of the droppings of our domestic fowls, the suds on washing days, and some do not forget to manufacture poudrette according to their means.

Stable manures are generally used in a crude state; but there is no doubt the better way is to compost it. I think fifty or even one hundred per cent. might be added to our manures by reasonable care.

Swamp muck and peat abound in this town, and have been considerably used, by hauling into barn-yards, by exposing to the frosts of winter, and then using as other manures, by spreading and ploughing in or harrowing. In either case, its effects are good, making the ground very mellow, and producing a generous increase of crops.

Guano and super-phosphate of lime have not been used, except of home manufacture. Plaster has been used on farms where the soil is rather dry, with good effect."

FROM JABEZ D. HILL, MOSCOW.

"I have built a cellar under my barn 30 x 42 feet; stone wall about 5½ feet high, upon which the sills of the barn rest. The cellar extends about 2½ feet above the sills. On the bank side of this cellar, and *in* it, is the "tie-up," and all the manure made in it is thrown into the cellar immediately in the rear of the cattle. This cellar is supplied with more or less muck, (just as I can find time to furnish it) litter in the shape of straw, weeds, brakes, &c., to absorb the urine from the cattle. In the winter my sheep are "yarded" in this cellar; in summer my cows are "yarded" there. In dull weather during haying time, this manure is forked over, so as to give the excrements of the animals, muck, straw, &c., a thorough mixing, and allow it to ferment a little faster than it will while trodden down solid by the feet of cattle. Soap suds and other slops from the house are thrown upon this heap of manure, as well as hen dung from the roosts.

In the fall, when I get leisure, I cart it out to the field and drop it in suitable heaps for spreading; taking care to have as little time elapse as possible before it is turned in by the plough. A generous application, regulated by the condition of the land, insures a good crop of corn or potatoes the next season, without putting manure in the hill at the time of planting.

Have used nitrous earth, taken from under an old barn to the depth of a foot, for corn; thought it superior to stable dung.

Have used muck pretty extensively for a few years. Have applied it green to the land (loamy and gravelly) at the rate of 80 loads to the acre, with no apparent benefit the first year; but as it became decomposed and mingled with the soil by frequent ploughings, found it was an improvement to the soil, which became "lively." The best way I have to use muck is, to dig it and let it lay on dry ground through the winter, so as to freeze thoroughly, when it becomes fine. It is then fit to use as an absorbent for the dung and urine of the barn and hog-pen. I use five or six loads of muck (if the season is so that I can get it) during the season, for each hog or horned creature kept on the premises."

FROM J. S. MURCH.

"Within a few years, many of the farmers of Dayton, have been in the practice of hauling muck and soils from the highways into their yards and composting to good advantage. A few have constructed barn cellars, which they think of great benefit to their manure, and deem the advantage greatly to exceed the outlay.

Some farmers are in the habit of using their manures in a green state, by spreading and ploughing or harrowing it in. If not used in a green state, it should, by all means, be composted, as the sun, rains and air will take away a large portion of their value. There is too much neglect on this point, among the cultivators of the soil.

It would be impossible for me to tell, and therefore I will not undertake it, how much increase in the value of manures might be made and saved on our farms, by reasonable care and labor; but I dare say more than one hundred per cent., by means of composting muck, top-soil, clay or sand, with our manures. By placing these ingredients in situations to take the liquids from our barn-yards and stables, under hen roosts, and all such places, they will soon acquire a richness that will render them very valuable. The wash of the sink, if properly managed, is capable of enriching a large quantity of material for manure.

Swine, if supplied with materials, will manufacture a large quantity of manure. Refuse hay, weeds, leaves, and leaf mould from the woods, and almost everything that will rot, are very valuable additions to our stock of compost. Swamp muck abounds in many localities, and is considerably used in making compost. I think it a good plan to stock it up a year or two before hand, that the sun, and air, and frost, may sweeten it and make it more mellow and friable, and therefore incorporate more readily with the manure. Lime or ashes, is good to mix with it, to neutralize the acids said to be contained in muck.

Mr. Leonard Ford has just informed me, that he purchased last spring, sixty-three pounds of guano, which he mixed with nine bushels of fine moist earth and two bushels of plaster. He let it lay about three weeks, stirring it occasionally to get it well mixed, and applied about half a pint to a hill of corn, on ground where manure had been spread. The result is, that the corn where guano was applied, is now one quarter larger than when none was used. He also applied it to potatoes in like quantity, using no other manure. The potatoes where the mixture was used, were big enough to hoe when those where none was applied, were just breaking the ground; and there is as much difference in the tops now, (Aug. 6,) as there is in his corn.

Plaster has been extensively used in town for quite a number of years; and on land to which it is adapted, is, perhaps, the cheapest manure or stimulant known. On loamy, clay and sometimes on moist sandy soils, its effects are sometimes surprising; whilst on dry, rocky, gravelly, or very wet soils, it does no good. It frequently more than doubles the crop, and the difference in the tops may be observed forty or fifty rods distant or more. I procured some plaster a number of years ago. One of my neighbors examined it and tasted of it, and said he knew that stuff would not do much good. I told him to bring over a bag when he came again, and I would give him as much of it as he would carry home, and he might try it for his own satisfaction. He accordingly brought his bag, and I kept shoveling in, till he said he had as much as he could well carry; I think he had about five pecks. I helped him shoulder it, and he made out to get it home, but told me afterwards, that he never had such a lug in his life. He was convinced that it was all I recommended it, and has bought and used a great deal since.

Plaster has a surprising effect sown on mowing and pasture lands. It brings in clover where none was perceivable before, so that some have made the observation that they did not believe but what there must be seed in the plaster. I have seen the initial letters of a name made with plaster on grass land, which could be read a number of years. I have sown it on grass land when the grass was nearly bound out, and it would come up a thick growth of clover, and the difference might be observed a great distance. When I cut over my manure heaps in the spring, I take a number of bushels of plaster, according to the size of my heaps, say about a bushel to a cord, and mix it well with the heap. The compost is of rather a clayey texture, and I am of the opinion that clay and plaster are the best substances to retain the strength of manure that we can obtain."

FROM CHESTER B. SUMNER.

"There has been no special means used in Appleton to improve the quality of manures. Stable manures are generally used in a crude state; but composting it with muck, is said, by those who have tried it, to be far preferable. I should say, that by considerable care, manures might be increased fourfold, by composting with muck, saving the drainage from the sink, &c. Mr. Levi Johnson, one of our best farmers, has been in the habit, for a number of years, of hauling into his barn and hog yards, large quantities of muck, which abounds in some parts of the town, found in any desirable quantities near his buildings, and composting it with other manures; by which means he has brought his farm, in a few years, from one of the poorest to be one of the most productive and profitable in town.

Guano, super-phosphate of lime, and poudrette have not been fairly tried, until this season. This season, guano and poudrette have been used considerably, and thus far they have proved all that could be expected."

FROM SAMUEL HASKELL.

"There has not been so much done to increase the quantity of manures as there might and ought to be. Those persons living near the shore have a plenty of rock weed, which makes a good dressing for one or two years. Stable manures are composted by some, and by others used in a crude state. I think horse manure should always be composted. The droppings of neat stock do well to plough into the ground in the spring, in its crude state. I think it better so than to be composted.

Swamp muck or peat abounds with us but it has not been so extensively used as it should be. It ought to be dug up one year before it is composted. It should not be used without composting, or having lime mixed with it.

Special manures have been tried to some extent, but not with very favorable results. Guano seems to be the best. Experience has not yet proved that there is any economy in using them. Leached ashes has been used to considerable extent, and gives good satisfaction."

FROM REV. A. LINCOLN.

"We have an abundance of meadow muck in Gray, and the more intelligent farmers are beginning to make considerable account of it. It is generally carted into the barn-yards, hog-pens, sink-drains and such like places, at different seasons of the year, and thus converted into manure. There is no doubt but that the value of manures might be increased at least fifty per cent. by a little more intelligence and industry. We have some very handsome fields of corn on sandy, plain land, where the only manure used has been meadow muck, which was hauled out in heaps, and exposed to the weather during one year, and then ploughed in, and also put in the hill.

Plaster has been fairly tried and it is generally considered valuable, when properly used, especially in a dry season; but in regard to other artificial manures, there has not yet been made a fair trial."

FROM W. H. POWERS.

"Many farmers in Bridgton cart swamp muck or loam into their barn-yards and pig-sties, and in some cases, into the barn cellar, to absorb the urine of the stock. Sheds for the protection of manure, are increasing. So are barn cellars. Stable manures are used mostly in a crude state, and ploughed under for corn and other hoed crops. By watering cattle in the barn yard in winter, in all cases where it is possible; by having cellars under the stables, and keeping them supplied with muck or loam to absorb urine, and supplying the pigs with the same material, in sufficient quantities; also using the same to absorb soap-suds and the liquid contents of privies, our manures might be greatly increased. Some farmers have used muck usually, and with the best effects, by carting into the hog yard, barn yard, and barn cellar. So used, it absorbs the liquids of those places, and thus becomes an excellent manure.

Plaster has been used in connection with other manures, and seldom otherwise. The other articles have not been much used. A few farmers used guano last year, and in some cases are continuing the experiment this year. Super-phosphate of lime and poudrette have been used in a very few instances this year; with what effect remains to be seen."

FROM S. F. PERLEY.

"In Naples, manures are better husbanded than formerly. Sheds or cellars are provided by most of our best farmers, for the protection of manures; and it is believed that one-third in quality, is thus saved. Muck has been used for fifteen or twenty years, though to a limited extent, till within the last few years. It is generally gaining favor, used as an absorbent, or in composts, though it has strong opponents among that class who seldom read. They cry out against book farming, and religiously follow the practices of their fathers. There is a good supply of this article in town. Very few farms of one hundred acres, but has its muck deposit. As its value becomes more generally known, it will prove a mine of wealth to the farmers and orchardists. Stable manures are not generally composted.

Super-phosphate of lime and poudrette have not been tried to any extent. Plaster is in common use, mostly on hoed crops; some on grass lands; it has not produced that effect generally which is reported of it elsewhere. Guano has had a few trials with but partial success, owing, as is believed, to want of knowledge or judgment in its application."

FROM E. SAMPSON.

"But very trifling attention is paid to the improvement of manures in Bowdoinham, and they are generally used in a crude state. Fifty per cent. might be saved or made on our farms, by reasonable care and attention in protecting our manures from the weather, and adding a proper quantity of swamp or meadow muck, leached or dry ashes, and salt, and occasionally moving the same to prevent too great fermentation, during the summer. In some sections of the town, swamp muck is abundant, and has been used to a limited extent and with good effect, even in a crude state."

FROM E. B. RANDALL.

"Some of the farmers in Limington, provide brakes, &c., for bedding, and adding to their manures. Muck is used in the yards by some. Stable manures are generally used in a crude state; but I think in common with all who understand the matter, that its value is greatly increased by composting. Twenty-five per cent. might be saved and added to that, by care and using pulverized muck, gypsum, soil, weeds and the like, and keeping the manure under cover until it is time to use it. My mode is to fork over winter manure about fifteen or twenty days before using it, that it may heat, kill the weeds in it, and be warm when applied to the ground, taking care to save the gases while it is fermenting and guard against fire-fanging.

Swamp muck or peat abounds with us, and it has been used by a few to advantage. Used in hog-pens, stables, and cattle yards, it makes one of the best composts for grain and grass. It shows in the grass crop ten years after it is applied, over ox dung kept under cover, and used on the same piece of land, and at the same time.

Guano has not been much tried. I used four hundred pounds last year, on Indian corn, and some on potatoes. I used one hundred pounds to the acre, this year, on wheat, and in all cases the effect is good. I think it as cheap at sixty dollars per ton, as any dressing we can buy. Plaster is used on dry lands with good success."

FROM B. F. EASTMAN.

"Very little is done to increase the quantity or improve the quality of manures by the farmers of Phillips. A few farmers have barn cellars for manures. Almost all admit their utility who have witnessed the results. Stable manures are generally used in a crude state. I doubt not that fifty per cent. in value might be saved on our farms, and as much more added, with but trifling expense. First, by preserving manures from the drenching rains and the burning influence of the sun and drying winds. Secondly, by paying more attention to littering our stock in the stables and barn yards, by preserving properly the almost endless number of substances that could be easily converted into manures, by supplying swine with materials of which to make manure. For example: a few years since, from the fourth of July to November, my two hogs supplied me with twelve cartloads or six cords of manure, which was enough to manure one acre of corn in the hill. I keep but two hogs, and they invariably supply manure enough for from one to one and a half acres of corn per year. Muck does not abound in large quantities in this town. Plaster only, has been to any extent applied to corn and potatoes on dry land newly broke up. Its effects are marked and beneficial."

FROM CAMDEN.

"No special means are used to increase the quantity or improve the quality of our manures. Considerable quantities of ashes from the lime kilns are used on our lands, and as a top dressing for grass, with considerable benefit.

Guano, super-phosphate of lime, and plaster, have been used to a limited extent in this vicinity, with but little or no benefit. Mexican guano was used, and I think the article wholly worthless; but I learn some who have used the Peruvian guano, think very highly of it. Whether it would be profitable to purchase at present prices, I am not prepared to say."

FROM M. GOULD.

"Sheltering manure from the weather, and supplying the stock with absorbent bedding, is common in Bridgton. A few individuals form compost heaps with good success. Manure is generally used in a crude state, spread on the land, and ploughed in. Probably more than one hundred per cent. might be added to our manure by a proper construction of hog yards, and supplying them with materials, the right arrangement of hen roosts, privies, and slop-sewers—the arrangement being such as to save all their products, and supplying an abundance of absorbents, such as saw dust, spent tan bark, dried leaves, brakes, and other weeds, muck and the like. There is, in many places, a good supply of muck, and it is considered valuable to spread in the cow-yards, hog-yards, and for compost, mixed with stable manure. It is a good dressing for potatoes, unmixed, improved by a little lime and plaster. Special manures have not been sufficiently tested to determine their comparative value. Guano has been used in several instances for corn and potatoes, and with apparant advantage. Plaster is considered almost indispensable, used in connection with other manures, for tilled crops of every kind."

FROM W. R. FLINT.

"In Anson, compost heaps of one-third from the barn-yard, and two-thirds swamp muck, are sometimes put up and used on grass ground to advantage. But the more general practice is, to deposit some loads of muck in the yards of the barn and hog pen in the fall, so that the mixture the next fall will be half and half. This is used for corn crops in the hill. Dried clay and ashes improve it, if well mixed, for sandy soils. It is believed that all manures may, in this way, be increased in value at least thirty per cent. There are but few localities where materials for composting and mixing manures may not be found in abundance. All wood lands are a good resort for this purpose. Scrape the leaves, with the top of the ground, and cart it into the yards at any season of the year. This is fully equal to the very best muck. The concentrated manures, with the exception of plaster of Paris, have not been thoroughly tested in this town. One man has tried guano on moist upland to no good effect, but it is still on trial in other localities. The use of plaster has not increased for the last twenty years, excepting on sward land for the potato crop, since the potato rot has prevailed."

FROM HENRY HOBBS.

In Hope, stable manures are generally used in a crude state. I can not tell the per centage of loss there is of manures from the want of proper care, but should think as much as one-half. In the first place, almost all the urine is lost. In the second, much of the manure is wasted by being exposed to the sun and rains. The urine might be saved, by the use of tanks, or by putting absorbents under the floor where cattle and horses stand. Perhaps litter on the floor might absorb and save it. The manure made by the hog is said to be the best for corn. I think one reason why it is better, is, that there is more urate in it. The hog is generally kept with plenty of litter to absorb and save his urine. Hence its strength.

All manures before use should be kept housed. They would be as much better as our firewood is better for being housed.

Although muck is not found on all our farms, almost every farmer might obtain it. It is not generally used to much extent. One farmer here uses a great quantity. Some he puts under his lintos, to catch and absorb the urine. Some he puts where the suds from the wash tubs are emptied. This he says, is good to put in the hill for corn.

Guano has been used two or three years only, by a few of our farmers. All kinds of grain and especially oats, have grown well on it. It has been tested by manuring a part of the same field with manure from the barn, and the other part with about two hundred and fifty or three hundred pounds of guano to the acre. The result is in favor of the guano. These experiments were tried with oats, by J. B. Dunton, Joseph Wiley, and Jason Bills. I have used six barrels of poudrette and two barrels of the tafeu, but have not fairly tested their value. I am satisfied they are powerful fertilizers; but I am not satisfied that they are cheaper, according to their fertilizing properties, than guano. Ebenezer Philbrick used a small quantity of super-posphate of lime last year and was satisfied that it was a powerful fertilizer."

Stock.

Intimately connected with, and of scarcely less importance than manure, is the subject of stock. This is apparent, if we look at the amount of capital invested in animals, and the means of properly caring for their wants, or at their relations to a prosperous agriculture. As one of the early writers on husbandry quaintly says: "A housbande cannot thruye by his corne without cattell, nor by his cattell without corne." The Flemish adage, "without forage no cattle, without cattle no dung, without dung no crops," involves a most important truth, and it is beyond question, that the best system of agriculture is that which sustains the greatest quantity of stock. From no point of view is the superiority of English agriculture so apparent, as in the amount of stock which is fed upon their farms. In one instance, no less than seven hundred sheep and lambs subsisted on little more than two hundred and thirty acres of land, besides thirty fatting oxen; and in another, two hundred and twenty-five cwt. of mutton and lamb are annually raised on ninety-four acres of arable land. It will doubtless be a long time before our farms approach such production; but this is no reason against striving to attain a high degree of improvement, and it is gratifying to perceive, from the replies, that an increasing interest is felt on this important subject. It is beginning to be understood, that there is a *very great* difference in value between a cow productive in rich milk, and one which only pays for her keeping; or between a breed of swine which yields twenty pounds of pork to the bushel of corn, and one which yields only ten.

The working oxen of Maine will now compare favorably with those of any sister State; but even in these, and more especially in regard to other domestic animals, it must be acknowledged that loss is annually suffered from keeping inferior and unprofitable stock, and that there is great room for improvement, not only as to the amount to be kept, but also in quality.*

The first requisite to improvement is to understand, as thoroughly as possible, the correct principles of breeding. When the causes which influence failure or success are well understood, and when certain effects are no longer looked upon as matters of chance and beyond our control, but as the natural results of certain causes, it is evident that efforts will be not only more intelligently conducted, but more profitably also.

Another requisite is the exercise of care and skill in the selection of animals for breeding, which possess such combination of desirable points as promise to furnish the qualities demanded, whether for the dairy, for labor, or for beef, in neat cattle; whether wool, or mutton in sheep, etc.; and a third is, such care and skill in their treatment as will secure a full development of whatever excellence they may naturally possess; as without the latter, they will become stinted in their growth, be later in coming to maturity, acquire vicious habits and deteriorate in many other ways.

---

* By the census of 1850, we had 133,556 milch cows in the State. It can scarcely be doubted that improvement could easily be effected with these, equivalent to the production of three cents worth of milk per day, without any increase of cost in keeping them. Such gain would amount to *nearly a million and a half of dollars annually*—$1,462,438.20.

In this way, some skillful farmers secure a degree of excellence in our native stock, much beyond the average, and by pursuing the same plan during a long series of years, what are usually termed the *new breeds*, have been obtained. These are new, in the sense of possessing such combination of desirable points or qualities, as render them superior to, and distinct from, the common, mixed, and mongrel breeds. It is also claimed for them, that their points of excellence have been, by a long process of careful discrimination in breeding, so *fixed or hereditary*, that their progeny are *sure* to be stamped with like excellencies; whereas, such as are crossed at random for a series of generations, like most of our natives, do not possess any points so *fixed*, that their progeny may not be almost as likely to resemble one of its ancestors as another; and so, however good any individual animal of any such mixed origin may be, it is *not reliable as a breeder*, to produce its like.

As a general rule, it is undoubtedly true, that "like begets like," but the trouble in practice is, that we cannot always perceive the "like" which is to be begotten. It is not only vain to expect healthy and perfect offspring from diseased and defective parents, but it is a well established fact, that diseases and defects may slumber through one or two generations, only to reappear stronger than before, in the third or fourth, and it is also true, that defects are more surely and easily propagated than virtues. Hence, in order to propagate with confidence, it is needful to know, not only that the parent is possessed of traits and points which it is desirable to perpetuate, but that its ancestors, as far back as may be, also had them, and were free from hereditary disease or defect.

Desirable qualities are sometimes antagonistic in character, and so it is impracticable to combine all in any one breed. The aim of the stock grower is to produce an animal which will yield the greatest pecuniary return in proportion to the cost, and he will direct his efforts accordingly. If oxen are destined for the shambles only, he seeks for early maturity, quiet and indolent disposition, capability to convert a given amount of food into the greatest amount of flesh and fat, and to have this developed on the most saleable parts of the animal after being slaughtered, and so small bone, small head and short legs, are desirable. If he desire oxen for labor, activity and nervous energy are better qualifications than indolence and fat, and so he seeks for somewhat larger brain and lungs, in order that they may be furnished. If dairy cattle be the object, other points are made secondary to the development of milking properties.

Efforts aimed at improvement, to be permanently successful, should not only be carried on with judicious skill and care, but should be long continued, and while it is not doubted that our native stock contains as good material, with which to commence the race of improvement, and in respect of thorough acclimation, even better, than any elsewhere to be found, it may yet be true policy to avail ourselves of what has been already accomplished by eminent breeders, who have devoted to the subject undivided attention, and made it the study and business of their lives; and which has resulted in the production of "Short Horns," "Devons," "Herefords," "Jerseys," etc. It is also said in favor of these new breeds, so called, that their peculiar traits are so *fixed*, or their *blood* so predominant, as to exercise a controlling influence, when crossed with natives or mongrels, possessing no such fixed traits, or any peculiar "blood." To illustrate, while a cross of two of the fixed breeds, might result in offspring partaking nearly alike of both, in a cross of one of the fixed breeds with natives or such as possess no peculiar blood of any sort, but rather a random mixture, the fixed blood so controls the progeny, that it is found to be, not merely a "half blood," but to be strongly marked as more than half like the blood parent. More especially is this the case, where the blood parent be the male, as it is usually admitted that the male has greater influence in determining the characteristics of the offspring, than the female. If this claim be well founded, it follows that improvement will the more rapidly follow the introduction of thoroughbred bulls, to cross with our native stock.

The relative influence of the male and female parent upon the progeny, is yet a matter which can hardly be considered as definitely settled. Whatever the rule may be, exceptions to it are not unfrequent. The opinions of the most skillful breeders favors the conclusion, that so far as regards size, external form, muscular development and general appearance, the influence of the male is greater than that of the female; while temper, disposition and nervous development, oftener follow the female than the male. Hereditary disease and weakness of constitution are much more likely to be imparted to the progeny by the mother, owing to the long and intimate connection, both before and after birth, up to the time of weaning, as the same blood nourishes both; hence freedom from disease and soundness of constitution should be deemed indispensably requisite in the female. It is well known that the Arabs prize and preserve their mares with peculiar care, and can scarcely be induced to part with one of undoubted purity of breed, for any consideration whatever, while they will readily sell a stallion for what they deem a handsome equivalent.

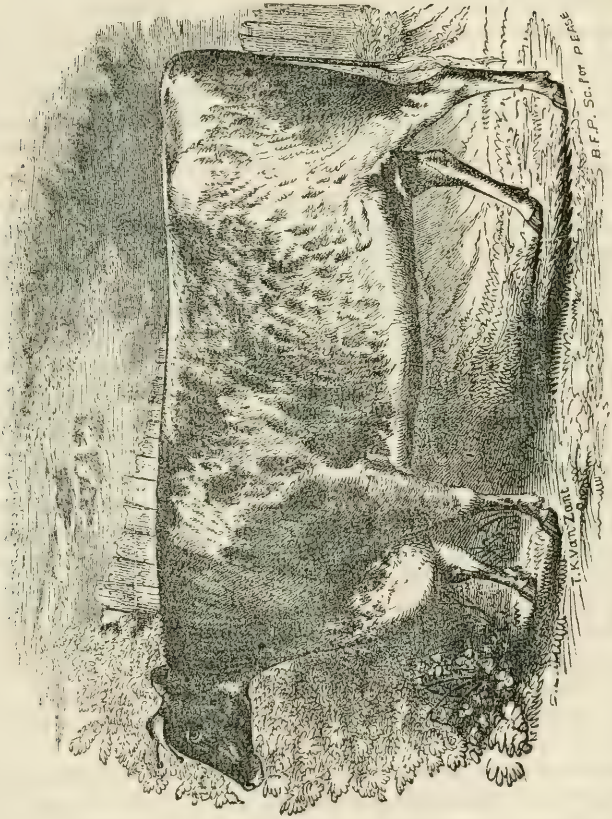
With regard to the comparative value of the various breeds, there is no little diversity of opinion among stock growers, each having its respective admirers and advocates. So far as can be gathered from the replies to the question of the circular on this point, it would seem that the Short Horns or Durhams have been more extensively introduced than any other, and either because of their intrinsic excellence, or because better known, are generally favorites. Indeed, there can be little doubt, that while others excel in some points, these combine as many good qualities as any other. To say that any breed combines, in good degree, economy of feed, rapidity of growth, capacity for labor, and fair milking qualities, is no faint praise, and that the Short Horns possess these, seems generally admitted. As milkers, however, they are not of uniform excellence, some breeders having so made their selections as to favor other points at the expense of milk, and not unfrequently grade cows are found to excel, for milk, those of full blood. They require good feed, care and shelter; receiving which, they are profitable, yielding largely of both milk and flesh, in proportion to the amount of food consumed.

The Devons, or rather North Devon cattle, are a highly attractive breed, being very symmetrical in form, of a bright red or mahogany color, the horns long and gracefully curved eye full and calm, skin mellow to the touch, hair silky and fine, active and docile for work, easily fattened, more hardy than the Short Horns, and so will thrive better at a scanty manger or meagre pasture, and are also fair milkers. They differ materially from the South Devon cattle, which are coarser animals, ill-shaped and of later maturity. Mr. Coleman remarks of these, that they are very like the native breeds of New England.

The Herefords are usually of somewhat larger size, and deeper color than the North Devons, with some white upon the face and throat, a hardy race and will thrive on comparatively poor keeping and fatten well; docile, and for heavy labor are unsurpassed, but not so sprightly as the Devons, and have little claim as dairy stock.

The Ayrshire and Jersey cattle, though having no claim to consideration either for the yoke or for beef, stand unrivalled for milking properties. The Ayrshires, so called, from the county of Ayr, in Scotland where they originated, have been but little introduced as yet into this State. By some they are thought to be allied to the Jerseys, while others insist that they are only well bred grades from a cross of the Short Horns, upon the small native cows of Scotland. However this may be, they are great favorites in their native locality. The Jerseys have been long famous for the quality of their milk, yielding as it does, from a quarter to a third of rich cream, of a deep golden hue. They have as little claim for beauty as for labor, but for the dairy, are unsurpassed by any other breed known. As more or less of these popular breeds are every year being introduced among us, and exhibited at our State and County Shows, it seems highly desirable that adjudging committees should have some standard of perfection, by which to judge of their several merits; as otherwise, with the best intentions, they are liable to fall into serious errors. There may be a very honest difference of opinion among the members of the committee, or between the committee and the exhibitor, to reconcile which, a reference to some acknowledged standard might be found of great service; and it often happens too, that a critical and detailed examination serves to modify first impressions. No such standard having been, to my knowledge, adopted within the State, it is thought advisable to introduce a scale of points, which has been adopted by the society of a neighboring State, and which does not differ materially from that used by the best breeders in England,

and which may be referred to, until our societies adopt one of their own; it is also believed that it may prove of great service to purchasers and breeders, in making selections of stock for purposes of improvement.



POINTS OF A SHORT HORN COW.

Pedigree—Showing unbroken descent, on both sides, from known animals, derived from English herds, as found in the English or American Herd Books, and without this, an animal cannot compete in this class.

The Head, small, lean, and bony, tapering to the muzzle,	3
The Face somewhat long, the fleshy portion of the *Nose* of a light, delicate color,	2

The Eye is of great significance, and should be prominent, bright and clear—"prominent," from an accumulation of "adeps" in the back part of its socket, which indicates a tendency to lay on fat—"bright," as an evidence of a good disposition—"clear," as a guarantee of the animal's health, whereas, a dull, sluggish eye, belongs to a slow feeder, and a wild, restless eye betrays an unquiet, fitful temper, 2

The Horns—light in substance and waxy in color, and symmetrically set on the head; the *Ear* large, thin, with considerable action, 1

The Neck—rather short than long, tapering to the head; clean in the throat, and full at its base, thus covering and filling out the points of the shoulders, 2

The Chest—broad from point to point of the shoulders; deep from the anterior dorsal vertebra to the floor of the sternum, and both round and full just back of the elbows; sometimes designated by the phrase, "thick through the heart." These are unquestionably the most important points in every animal, as constitution must depend on their perfect development, and the ample room thus afforded for the free action of the heart and lungs, 14

The Brisket, however deep or projecting, must not be confounded with *capacity* of chest, for though a very attractive and selling point, it, in reality, adds nothing to the space within, however it may increase the girth without. It is in fact, nothing more nor less than a muscular adipose substance, attached to the anterior portion of the sternum, or breast bone, and thence extending itself back. This form, however, of the brisket, indicates a disposition to lay on fat generally throughout the frame, and in this point of view is valuable, 5

The Shoulder, where weight, as in the Short-horn, is the object, should be somewhat upright, and of good width at the points, with the blade bone just sufficiently curved to blend its upper portion smoothly with the crops, 4

The Crops must be full and level with the shoulders and back; and is, perhaps, one of the most difficult points to breed right in the Short-horn, 8

The Back, *Loin*, and *Hips* should be broad and wide, forming a straight and even line from the neck to the setting on of the tail, the hips or hucks round and well covered, 8

The Rumps laid up high, with plenty of flesh on their extremities, 5

The Pelvis should be large, indicated by the width of the hips (as already mentioned) and the breadth of the twist, 2

The Twist should be so well filled out in its "seam" as to form nearly an even and wide plain, between the thighs, 3

The Quarters—long, straight, and well developed downwards, 5

The Carcass—round; the ribs nearly circular, and extending well back, 4

The Flanks—deep, wide, and full in proportion to condition, 3

The Legs—short, straight, and standing square with the body, 2

The Plates of the belly, strong, and thus preserving nearly a straight under line, 3

The Tail—flat and broad at its root, but fine in its cord, and placed *high up*, and on a level with the rumps, 2

The Carriage of an animal gives style and beauty; the walk should be square and the step quick; the head up, 2

Quality—On this the thriftiness, the feeding properties, and the value of the animal depends; and upon the touch of this quality rests, in a good measure, the grazier's and the butcher's judgment. If the "touch" be good, some deficiency of form may be excused; but if it be hard and stiff, nothing can compensate for so unpromising a feature. In raising the skin from the body, between the thumb and finger, it should have a soft, flexible, and substantial feel, and when beneath the out-spread hand, it should move easily with it, and under it, as though resting on a soft, elastic, cellular substance; which, however, becomes firmer as the animal "ripens." A thin, papery skin is objectionable, more especially in a cold climate, 15

The Coat should be thick, short and mossy, with longer hair in winter, fine, soft and glossy in summer, 2

The Udder—pliable and thin in its texture, reaching well forward, roomy behind, and the teats wide apart, and of convenient size, 3

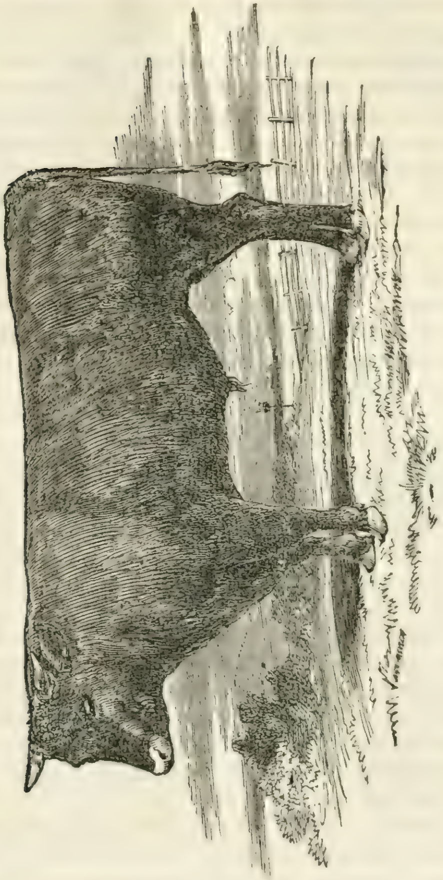
100

Points of the Short-horn Bull.

As regards the male animal, it is only necessary to remark, that the points desirable in the female are generally so in the male, but must, of course, be attended by that masculine character which is inseparable from a strong, vigorous constitution. Even a certain degree of coarseness is admissible, but then it must be so exclusively of a masculine description as never to be discovered in the females of his get.

In contradistinction to the cow's, the head of the bull may be shorter, the frontal bone broader, and the occipital flat and stronger, that it may receive and sustain the horn—and this latter may be excused if a little heavy at the base, so its upward form, its quality and color, be right. Neither is the looseness of the skin attached to, and depending from the under jaw, to be deemed other than a feature of the sex, provided it is not extended beyond the bone, but leaves the gullet and throat clean and free from dewlap.

The upper portion of the neck should be full and *muscular*, for it is an indication of strength, power and constitution. The spine should be strong, the bones of the loin long and broad, and the whole muscular system wide and thoroughly developed over the entire frame.



NORTH DEVONS.

Purity of blood, as traced back satisfactorily to importations of both dam and sire, from known English breeders, or as found in the lately established Herd Book, for North Devons, and without this, an animal cannot compete in this class.

The Head should be small, lean and bony; the forehead wide, flat, or from a fullness of the frontal bone over the eyes, somewhat dishing; the face straight; the muzzle fine; the nostrils open; the lips thin and rather flat, 4

The Nose of a light delicate orange color, 4

The Eye should be bright, prominent and clear, but mild and gentle in its expression, as indicative of that spirited, but tractable disposition so necessary to cattle that must bear the yoke; a beautiful orange-colored ring should invariably surround the eye, 4

The Ear—thin; of a rich orange-color within, of medium size, with a quick and ready movement, expressive of attention, 2

The Horns—light, tapering, of a waxy color toward the extremity, and gaily as well as symmetrically placed on the head; the occipital bone, narrow, thus bringing the base of the horns nearer together, 2

The Neck of medium length, somewhat light in substance, very clean, and well set up on the shoulder, 2

The Chest—deep and round, carrying its fullness well back of the elbows, thus affording, by the aid of a springing rib, abundant internal room for the action of the thoracic viscera, the heart and lungs, and that too, without an *extreme* width forward, and between the points of the shoulders, which might interfere with the action of the animal, 14

The Brisket—It being assumed that it adds nothing to the internal capacity of the chest, must not overload the breast, but be sufficiently developed to guarantee a feeding property, attended with a full proportion of fatty secretion, 4

The Shoulder is, in this breed, a very beautiful and important point, and should in a *degree* approximate in form to that of the horse. It should take a more sloping position than is found in most other breeds, with its points less projecting, and angular, and the blade bone more curved, thus blending with and forming a fine wither, rising a little above the level line of the back, 4

The Crops full and even, forming a true line with the somewhat rising shoulder, and level back, without either drop or hollow, 3

Back, *Loin* and *Hips*, broad and wide, running on a level with the setting on the tail, 9

The Rumps—lying broad apart, high, and well covered, 5

The Pelvis—wide, 2

The Twist—full and broad, 3

The Quarters long and thoroughly filled up between the hooks, or hip bones, and the rumps, with a good muscular development down the thigh to the hocks, 6

The Flank—Moderately deep, full and mellow in proportion to condition, 3

The Legs not too short, and standing as square, and straight behind, as may be compatible with activity. The bone quite small below the hock and knee; the sinews large and clean, with the fore-arm well developed, 5

The Carcass round and straight; its posterior ribs almost circular, extending well back, and springing nearly horizontally from the vetebra, giving, in fact, much greater capacity than would at first appear, 2

The Tail, at its junction, level with the back, long, very slender in its cord, and finishing with a tassel of white hair, 1

The Color, in its *shades* and *degrees*, is more or less governed by fashion; but in the Devon is always red. Formerly a rich blood-red was the favorite color, and a test of purity; and now a somewhat lighter color is in vogue, approaching rather nearer to that of the *South* Devon, which is a larger, coarser, stronger animal. In all cases the color grows lighter round the muzzle, while a dark mahogany color, verging almost to a black, and growing yet darker about the head, always was a very questionable color for a *true North Devon*, more especially when accompanied by a dark nose, 1

The Hair should be short, thick, and fine; and if showing on its surface a fine curl, or ripple, it looks richer in color, and is supposed to indicate a hardier and more thrifty animal, 1

The Udder should be such as will afford the best promise of capacity and product, 1

The Carriage—The Devons having, from their excellence in the yoke, another destiny besides that of the butcher's block, it is all important that the animal's carriage should indicate as much; but to obtain this, something of the heavy, inert, squarely moulded frame of the merely beefing animal must be relinquished for a lighter and more active frame, 3

Quality—On this the thriftiness, the feeding properties, and the value of the animal depend; and upon the touch of this quality rests, in a good measure, the grazier's and the butcher's judgment. If the "touch" be good, some deficiency of form may be excused; but if it be hard and stiff, nothing can compensate for so unpromising a feature. In raising the skin from the body, between the thumb and the finger, it should have a soft, flexible and substantial feel, and when beneath the out-spread hand, it should move easily, with it, and under it as though resting on a soft, elastic, cellular substance; which, however, becomes firmer as the animal "ripens." A thin papery skin is objectionable, more especially in a cold climate, 15

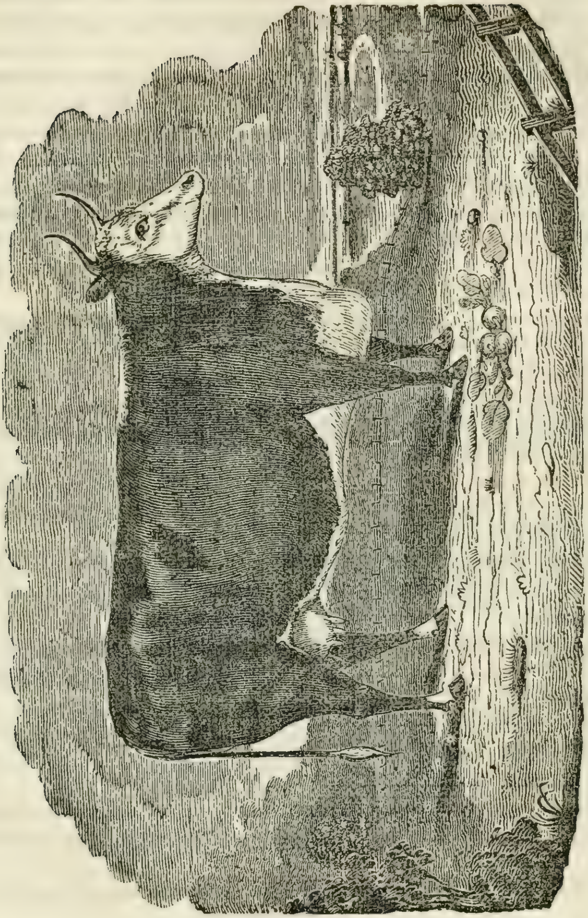
100

Points of the Devon Bull.

As regards the male animal, it is only necessary to remark, that the points desirable in the female are generally so in the male, but must, of course, be attended by that masculine character which is inseparable from a strong, vigorous constitution. Even a certain degree of coarseness is admissible, but then it must be so exclusively of a masculine description as never to be discovered in the females of his get.

In contradistinction to the cow's, the head of the bull may be shorter, the frontal bone broader, and the occipital flat and stronger, that it may receive and sustain the horn—and this latter may be excused if a little heavy at the base, so its upward form, its quality and color, be right. Neither is the looseness of the skin, attached to, and depending from the under jaw, to be deemed other than a feature of the sex, *provided* it is not extended beyond the bone, but leaves the gullet and throat clean and free from dewlap.

The upper portion of the neck should be full and *muscular*, for it is an indication of strength, power and constitution. The spine should be strong, the bones of the loin, long and broad, and the whole muscular system wide and thoroughly developed over the entire frame.



HEREFORDS.

Purity of Blood, as traced back to the satisfaction of committees, to imported blood, *on both sides,* from some known English breeder, or as found in Eyton's Hereford Herd Book.

The Head—moderately small, with a good width of forehead, tapering to the muzzle; the cheek-bone rather deep, but clean in the jaw,	3
The Nose, light in its color, and the whole head free from fleshiness,	2
The Eye full, mild and cheerful in its expression,	2
The Ear of medium size,	1
The Horns—light and tapering, long and spreading, with an outward and upward turn, giving a gay and lofty expression to the whole head,	2
The Neck—of medium length; full in its junction with the shoulders, spreading well over the shoulder points and tapering finely to the head,	2

The Chest—broad, round, and deep; its floor running well back of the elbows, which, with a springing fore-rib, gives great interior capacity to this all important portion of the body, 14

The Brisket—when in flesh, largely developed, descending low between the legs, and deep, by covering the anterior portion of the sternum, or breast bone, but never interfering with the action of the animal when in working condition, 4

The Shoulder—lying snugly and closely in towards the top and spreading towards the points; the blade sloping somewhat back, and running pretty well up into the withers, which by rising a very trifle above the level line of the back, gives to the ox a very upstanding, and beautiful fore-end. The whole shoulder well clothed with muscle, 3

The Crops—filling all up evenly behind the shoulders, and blending them smoothly with the muscles of the back, 3

The Back, loin and hips, should be broad, wide and level, 8

The Rumps should lie nearly, or quite level with the back, and their covering should be abundant, mellow, loose, and freely moving under the hand, thus showing great aptitude to fatten, 4

The Pelvis—roomy; indicated by wide hips, as already mentioned, and the space between the rumps, which should stand well apart, giving a general breath to the posterior portion of the animal, 3

The Twist, broad and full, extending well down on each side of the thigh, with corresponding width—a broad twist is a good indication of a butcher's animal, 5

The Hind Quarters—large and thoroughly developed in the upper and more valuable portions, as beef. The thigh gradually tapering to the hock but muscular, 6

The Carcass—round throughout; full and capacious, with the under line of the belly level, or nearly so, 3

The Flank full and wide, 3

The Legs—straight, upright; firmly placed to support the superincumbent weight; a strong back sinew, but by no means a large, coarse, cannon bone, 3

The Plates of the belly strong, and thus preserving nearly a straight under line, 3

The Tail—large and full at its point of attachment, but fine in its cord, 2

The Carriage—prompt, resolute, and cheerful; and in the ox, gay and lively, 3

The Hair—thick, close and furry, and if accompanied with a long growth, and a disposition to curl moderately, is more in estimation, but that which has a harsh and wiry feel is objectionable, 3

The Udder should be such as will afford the best promise of capacity and product, 2

Color—Reds or rich browns, oftentimes very dark, with a white or "brockled" face, are now the colors, and marking of the Herefords, though gray Herefords or cream-colored, are not uncommon, 1

Quality—On this the thriftiness, the feeding properties, and the value of the animal depend; and upon the touch of this quality rests, in a good measure, the grazier's and the butcher's judgment. If the "touch" be good, some deficiency of form may be excused; but if it be hard and stiff, nothing can compensate for so unpromising a feature. In raising the skin from the body, between the thumb and finger, it should have a soft, flexible and substantial feel, and when beneath the out-spread hand, it should move easily with it, and under it, as though resting on a soft, elastic, cellular substance; which, however, becomes firmer as the animal "ripens." A thin papery skin is objectionable, more especially in a cold climate, 15

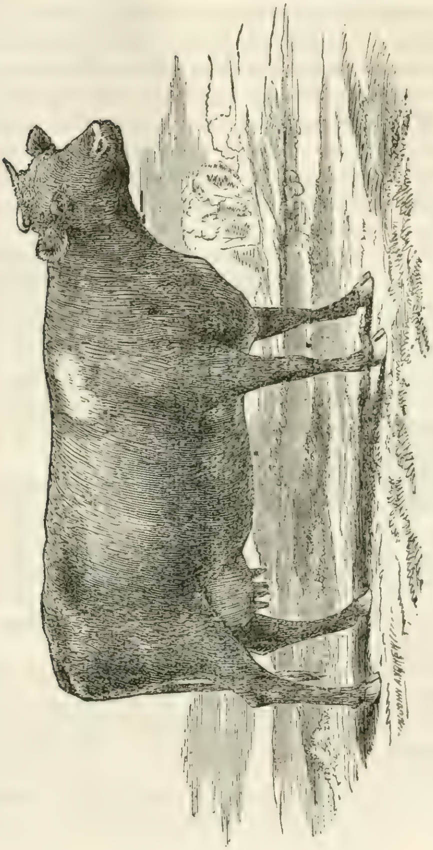
100

Points of the Hereford Bull.

As regards the male animal, it is only necessary to remark, that the points desirable in the female are generally so in the male, but must, of course be attended by that masculine character which is inseparable from a strong, vigorous constitution. Even a certain degree of coarseness is admissible, but then it must be so exclusively of a masculine description as never to be discovered in the females of his get.

In contra-distinction to the cows, the head of the bull may be shorter, the frontal-bone broader, and the occipital flat and stronger, that it may receive and sustain the horn—and this latter may be excused if a little heavy at the base, so its upward form, its quality and color be right. Neither is the looseness of the skin, attached to, and depending from the under jaw, to be deemed other than a feature of the sex, *provided* it is not extended beyond the bone, but leaves the gullet and throat clean and free from dewlap.

The upper portion of the neck should be full and *muscular*, for it is an indication of strength, power and constitution. The spine should be strong, the bones of the loin, long and broad, and the whole muscular system wide and thoroughly developed over the entire frame.



AYRSHIRES.

Purity of Blood, as traced back to importations of both dam and sire, under such evidence as will satisfy committees.

The Head, as in other breeds, small; the face long and narrow; the muzzle and nose variable,	4
The Eye placid and not strikingly large,	2
The Ear of full size, and of an orange color within,	4
The Horns small, tapering, with an outward and upward turn, and set on wide apart; the face somewhat dishing,	2
The Neck of medium length, clean in the throat, very light throughout, and tapering to the head,	4
The Shoulders lying snugly to the body, thin at their top, small at their points, not long in the blade, nor loaded with muscle,	6

The Chest must retain sufficient width and roundness to insure constitution. The lightness of the fore-quarter, and the "wedge shape" of the animal from the hind-quarter forward, arising more from a small, flat and thin shoulder, than from any undue narrowness of the chest,	12
The Crops easily blend in with so thin a shoulder, and prevent all hollowness behind,	4
The Brisket not over-loading the fore-end, but light,	4
The Back should be straight, and the loin wide, the hips rather high and well spread,	8
The Pelvis roomy, causing a good breadth at what is termed the "thurl," or "round bone," and between the points of the rumps,	4
The Quarters long, tolerably muscular, and full in their upper portion, but moulding into the thighs below, which should have a degree of flatness, affording thus more space for a full udder. The flank well let down, but not heavy,	6
The Ribs, behind, springing out *very* round and full, affording space for a large udder, which by Ayrshire breeders is considered very essential to secure the milking property; the whole carcass thus acquiring increased volume towards its posterior portion,	8
The Rumps nearly level with the back projecting but little,	4
The Tail thin in its cord, of full length, light in its hair, and set somewhat farther into the back than would be admissible with some other breeds,	1
The Legs delicate and fine in the bone, inclining to be short, and well knit together at the joints,	3
The Udder in this breed is of more especial importance, as the Ayrshires have been bred almost exclusively with reference to their milking properties. The great feature of the udder should be capacity, without being fleshy. It should be carried squarely and broadly forward, and show itself largely behind. As it rises upward it should not mingle too immediately with the muscle of the thighs, but continue to preserve its own *peculiar* texture of skin—thin, delicate and ample in its folds. The teats should stand wide apart, and be lengthy, but not large and coarse,	12
The Handling will show the skin to be of medium thickness only, moving freely under the hand, and evincing a readiness in the animal to take on flesh, when a drain on the constitution is no longer made by the milk-pail,	6
The Hair soft and thick—in the phraseology of the country, woolly,	4
Color, varies—a dark red—a rich brown—a liver color, or mahogany, running into almost a black; those very much broken and spotty at the edges on a white ground are the favorite colors at the present time. The light yellow is, however, a color, sometimes found on very good cows, but these pale colors are objected to from an impression that such belong to animals of less constitution,	1
Carriage should be light, active, and even gay; this latter appearance is much promoted by the upward turn of the horn,	1
	100

Points of the Ayrshire Bull.

As regards the male animal, it is only necessary to remark, that the points desirable in the female are generally so in the male, but must, of course, be attended by that masculine character which is inseparable from a strong vigorous constitution. Even a certain degree of coarseness is admissible, but then it must be so exclusively of a masculine description as never to be discovered in the females of his get.

In contradistinction to the cow's, the head of the bull may be shorter, the frontal bone longer, and the occipital flat and stronger, that it may receive and sustain the horn—and this latter may be excused if a little heavy at the base, so its upward form, its quality and color be right. Neither is the looseness of the skin, attached to, and depending from the under jaw, to be deemed other than a feature of the sex, *provided* it is not extended beyond the bone, but leaves the gullet and throat clean and free from dewlap.

The upper portion of the neck should be full and *muscular*, for it is an indication of strength, power and constitution. The spine should be strong, the bones of the loin long and broad, and the whole muscular system wide and thoroughly developed over the entire frame.

For the Jersey cattle a foreign scale is appended, which was adopted in the Isle of Jersey, June, 1849, being the one now in use abroad:

SCALE OF POINTS FOR BULLS.

I. Pedigree on male side,	1
II. Pedigree on female side,	1
III. Head fine and tapering,	1
IV. Forehead broad,	1
V. Cheek small,	1
VI. Throat clean,	1
VII. Muzzle fine, and encircled with a light color,	1
VIII. Nostrils high and open,	1
IX. Horns smooth, crumpled; not too thick at the base, and tapering, tipped with black,	1

X. Ears small and thin,	
XI. Ears of a deep orange color within,	1
XII. Eye full and lively,	1
XIII. Neck arched, powerful, but not too coarse and heavy,	1
XIV. Chest broad and deep,	1
XV. Barrel-hooped, broad and deep,	1
XVI. Well ribbed home, having but little space between the last rib and hip,	1
XVII. Back, straight from the withers to the top of the hip,	1
XVIII. Back straight from the tops of the hips to the setting on of the tail and the tail at right angles with the back,	1
XIX. Tail fine,	1
XX. Tail hanging down to the hocks,	1
XXI. Hide mellow and moveable, but not too loose,	1
XXII. Hide covered with fine and soft hair,	1
XXIII. Hide of a good color,	1
XXIV. Forelegs short and straight,	1
XXV. Forearm large and powerful, swelling and full above the knee, and fine below it,	1
XXVI. Hind quarters from the hocks to the point off the rump; long and well filled up,	1
XXVII. Hind legs short and straight (below the hocks,) and bones rather fine,	1
XXVIII. Hind legs squarely placed and not too close together when viewed from behind,	1
XXIX. Hind legs not to cross in walking,	1
XXX. Hoofs small,	1
XXXI. Growth,	1
XXXII. General appearance,	1
XXXIII. Condition,	1
Perfection,	33

No prize shall be awarded to a bull having less than twenty-seven points.

Scale of Points for Cows and Heifers.

I. Pedigree on male side,	1
II. Pedigree on female side,	1
III. Head small, fine and tapering,	1
IV. Cheek small,	1
V. Throat clean,	1
VI. Muzzle fine and encircled with a light color,	1
VII. Nostrils high and open,	1
VIII. Horns smooth, crumpled, not too thick at the base and tapering, tipped with black,	1
IX. Ears small and thin,	1
X. Ears of a deep orange color within,	1
XI. Eyes full and placid,	1
XII. Neck straight, fine and lightly placed on the shoulders,	1

XIII. Chest broad and deep,	1
XIV. Barrel-hooped, broad and deep,	1
XV. Well ribbed home, having but little space between the last rib and the hips,	1
XVI. Back straight from the withers to the top of the hip,	1
XVII. Back straight from the top of the hips to the setting on of the tail, and the tail at right angles with the back,	1
XVIII. Tail fine,	1
XIX. Tail hanging down to the hocks,	1
XX. Hide thin and movable, but not too loose,	1
XXI. Hide covered with fine and soft hair,	1
XXII. Hide of a good color,	1
XXIII. Fore legs short, straight and fine,	1
XXIV. Fore arm swelling, and full above the knee and fine below it,	1
XXV. Hind quarters from the hock to the point of the rump, long and well filled up,	1
XXVI. Hind legs short and straight, (below the hocks,) and bones rather fine,	1
XXVII. Hind legs squarely placed, and not too close together, when viewed from behind,	1
XXVIII. Hind legs not to cross in walking,	1
XXIX. Hoofs small,	1
XXX. Udder full in form, that is, well in line with the belly,	1
XXXI. Udder well up behind,	1
XXXII. Teats large and squarely placed, being wide apart,	1
XXXIII. Milk veins very prominent,	1
XXXIV. Growth,	1
XXXV. General appearance,	1
XXXVI. Condition,	1
Perfection,	36

Three points should be deducted from the number required for the perfection of heifers, as their udder and milk-veins cannot be fully developed. A heifer will be considered perfect at thirty-three points.

No prize shall be awarded to cows or heifers having less than twenty-nine points.

Bulls having obtained twenty-six points, and cows and heifers twenty-eight points, without pedigree, shall be allowed to be branded, but cannot take a prize.

The following scale of Points is offered with much diffidence, in the hope that it may aid, at least, in forming some system. If societies or committees would adopt some such known standard, to be followed in similar cases, it would be found, it is thought, of essential service:—

SCALE OF POINTS FOR COWS AND HEIFERS FOR THE DAIRY.

I. Head small, lean and tapering, eye full, lively and mild, ears small, orange within, horns small,	5

II. Back straight, from withers to root of the tail. Brisket full, chest deep, and nearly on a line with the belly. (The shoulders sometimes rise loosely above the back bone, many good milkers have this *defect.*) 4

III. Skin moderately thick, but mellow; hair soft to the touch and fine. The skin should incline to yellow, and be soft, 3

IV. Barrel-hooped, broad and deep, surloin broad, tail tapering from the rump downwards, 4

V. Legs straight, delicate, and fine boned, 2

VI. Apparent health, 2

VII. Udder coming broadly and squarely forward, large and full behind, and rising up the thighs, preserving its distinct character of skin, soft, delicate and loose folds, with teats of medium length, standing well apart, 5

VIII. The escutcheon is represented by the upward growing hair, which commencing on the back side and near the lower part of the udder, and on the inside of the hocks, extends upwards towards the first touch or tip of the rump, and also upwards and outwards to the outer edge of the thigh. The better marks are those which extend farthest out upon the thighs, other things being equal. Accompanying these best marks, there are also two spots or rounds of downward growing hair, one on each side of the udder, near the hinder teats. There are also many other particulars connected with different escutcheons, the comparative value of which can only be understood by reference to the small treatise upon the subject, by M. Guénon, which is easily accessible to all, in a translation, a second edition of which has been lately published.

As milk is the chief object with most who keep milch cows, the escutcheon which indicates this in the highest degree should be entitled to, 5

Points of perfection, 30

No animal should obtain a premium which has less than twenty.

The points desirable in the bull are in the main the same, marked, however, by a more masculine character.

[The above (except scale for Jerseys,) is copied from the very able report for 1853, of Mr. Flint, Secretary of the Massachusetts Board of Agriculture.]

Swine.

Their seems to be a good degree of unanimity as to the preferable breed of swine, the replies in nearly all cases indicating a cross of the Suffolk with some larger breed as yielding pork of excellent quality as well as easily and cheaply grown. The pure Suffolk is objected to as not attaining sufficient size. Some correspondents speak in very favorable terms of the Berkshire and Essex breeds. More attention is paid than formerly to improvement, though in some instances the reply is, that but little has yet been accomplished. As to the profit of growing swine for pork, about two-thirds reply that it can be grown at a profit, and nearly one-third say it cannot, or not at present prices of produce. As these diverse opinions seem to be expressed with confidence, it would be interesting to ascertain, if possible, whether, and how far they are the result of careful experiment, or of guessing, or whether, if a cross-examination could be had, views more nearly corresponding might not be elicited. The latter supposition is favored by some of the replies, as "no, not as a business," "a few swine can be grown on the farm to advantage," "a pig to two cows pays well," &c.

Sheep.

These have been long grown, to greater or less extent, in this State, and at various times improved breeds have been introduced, but it does not appear from the replies received that very great interest is taken, at the present time, in rearing them, or that they occupy so prominent a position in our general farm economy as might be expected from our facilities to rear them profitably.

Like neat cattle, we cannot combine in one breed, all desirable qualities, and the policy of the grower is to select such as pay best in his own locality, or in the nearest market. If choice mutton be desired, size, early maturity, delicate flavor of meat and a disposition to fatten easily, are to be sought rather than quality of wool. In times past the production of wool has engaged the attention of many of our farmers, but the fluctuation in its price has been so great as to have a very discouraging tendency.

The growth of choice mutton has received less attention, and such as may be deemed of really fine quality is rarely seen in our market. It is believed that mutton sheep, in connection with an extended culture of roots, might profitably receive far greater attention than they have hitherto done.

FROM EUSEBIUS WESTON, SKOWHEGAN.

"Very considerable attention has been devoted to improving stock of sheep, neat cattle and horses, with good success. Fifty years ago oxen at their growth were not over six feet, now many are seven by the third year, and some arrive at eight. The Durhams and Hereford breeds have been tried and various opinions exist as to utility. Dairies suffer and oxen flourish with Durhams, though good cows come from them. The Herefords are good milkers, and both fatten well. Aryshire are not despised. Merino and Saxon sheep crossed, are most kept, other kinds occasionally. Dishleys are good for some purposes. Sheep are worth from $1,50 to $3,50 per head.

Pork could be grown to considerable extent at the prices it has been for sometime, but not at the low rates. Many think six cents will pay, others ten. The best hogs have been made from whites and crossed, but there is not half care enough taken to preserve distinctions in swine and other stock."

FROM W. D. DANA, WASHINGTON COUNTY.

"Attention is being awakened to the importance of improving our stock, and through the efforts of the Agricultural Aid Society, a horse of the Black Hawk and Morgan, and a thorough bred imported Devonshire bull have been secured for the county. Some Ayrshires, a Hereford bull, Merino sheep, and Suffolk and Essex pigs have been procured by private individuals.

There are different opinions as to the best breeds of sheep; some preferring the Merino and some the Dishley. Common sheep are worth two to three dollars, *fancy* sheep, like other animals have *fancy* prices. Our markets being good, mutton is more of an object with us than wool. Pork cannot be grown at a profit *as a business*, with any breeds we have heretofore had. What the new breeds may do for us time will show."

FROM S. W. COBURN, SOMERSET COUNTY.

"We have some good animals raised here. The Durhams have taken the lead, but other imported breeds have not been brought into competition.

The different breeds of sheep, such as the Spanish Merino, Dishley, and the South Down raised here, have their respective advocates. The Downs and Dishleys for mutton,are superior to Merinos, the Downs ahead. They are also hardy, but have a light fleece and that not of finest quality. The recent importation of the large French sheep has not yet been fully tried here, though there are some of them in the neighborhood. The common kinds mentioned above, are worth here in the fall, usually about two dollars per head.

For a few years past the Suffolk breed of swine has been displacing the variety of breeds in use before, though they do not give *general* satisfaction. Many think them too small for profit, some do not like their hungry noise, it gives the liberal feeder such faint praise, even though the swine may seem to fatten on the exercise. They have some advantages over most other breeds, which will go far to their eventual success. They are little plump hogs, fully ripe for killing at any age, and when killed make pork worth at least one quarter more than any other breed. The proportion of meat to the bone would give very nearly this advantage over most other breeds. Then the proportion of fat to lean far excels most other hogs, the quality of both is fine, sweet and tender, while some of our large breeds furnish coarse, tough, wooly meat, filled with two streaks of lean to one of fat, to say nothing about the beefy character of this lean, the size of the bone or the thickness of the rind. The Suffolk hog will thrive on grass or weeds, or winter on green stuff, such as apples, carrots, or even turnips, better than *any* other breed. I usually keep from ten to twenty, and have wintered them on ruta bagas, so as to be full fat enough to raise pigs, even when fed with the turnips raw, with no other feed. I have never had a breed that would do this before. On the other hand they are not naturally large, three hundred being good size for twelve months hog, fattened, though they often go beyond that figure. They will not breed so young as many other breeders, nor are the pigs so hardy or of so even size, some being small, some large. As to the growth of pork at a profit, it must depend not only on the breed, but a variety of other circumstances. The price of pork per pound compared with the price of grain, is always material to the answer of this question. When corn is worth seventy-five cents, and pork ten cents, it is easy to see that pork would pay better than when corn is a dollar and twenty-five cents, and pork six cents.

In one position, the manure may be of more value to the farmer than in another, and the materials for hogs to work over, easier of access, or one or two hogs may be made profitable to use material nearly worthless for other stock, and also to work over manure under the stable, when a large number would not be equally valuable. A man to keep swine to advantage, must know how, have good accommodations for them, and understand how to use to advantage, vegetables of one kind or another, according to the season of the year, and to make them available for a large increase of valuable manure for the farm. Then I should say, that with a good breed, he may make pork at a profit when he can sell it for ten cents per pound, and not have corn worth more than a dollar per bushel. I would not risk it with much variation of these figures, to an extent of more than one or two to a family. Others may."

FROM ASA CHARLES, FRYEBURG.

"Nothing of consequence is done for the improvement of domestic animals. Among neat cattle, I think the Devons are most prized. Sheep are not largely raised in this town; it may be for the want of pasturage. The native breeds are raised in most cases, probably, not from choice, but convenience. We have, however, the imported breeds mostly mixed, such as the Merino, Saxony, and others. Of swine, every kind and and description may be found, from the long-snouted, slab-sided racer, to the sleekest Bedford or Suffolk, and all possible gradations between, and each may have its admirers, as general esteem is settled on no one breed. There is probably no settled conviction among our farmers, as to the profit of raising pork. My own opinion is, that in connection with the dairy, and in proportion to its extent, pork-raising is one of the most profitable branches of husbandry."

FROM JAMES W. CARPENTER, KENNEBEC COUNTY.

"Considerable attention is given in Pittston, to raising improved stock. Among neat stock, the Durhams, I should judge, are the most highly esteemed. A very few full blood Merino sheep are to be found in this town. A small number of the more common breeds are kept by most of our farmers, which is the extent of our wool-growing. A cross between the Newbury White and Suffolk swine is the most highly esteemed among us. I believe that pork can be grown at a profit, if the round hog will sell for eight cents per pound, and Indian corn at not over eighty cents per bushel, in connection with dairy and farming operations, giving credit for the manure."

FROM JOHN ROGERS.

"The old native breed of neat cattle still continues to be bred, for the want of some enterprising farmers to introduce improved breeds, which will be more profitable for the dairy and for beef. Of sheep, we have some half blood South Downs, and a mixture of the Dishley. These are worth, at the present time, from eight to ten dollars per pair. Of swine, an even cross between the Suffolk and Berkshire is considered the best breed. It is thought by the farmers in this town, that pork can be made, from farm produce, for seven cents per pound."

FROM S. N. WATSON.

"Considerable attention has been given, of late, to the improvement of our neat stock. Some four years ago, J. H. Underwood, Esq., brought into Fayette a full blood Hereford bull. His stock, thus far, stands ahead of anything we have had before. Previous to this, we were prejudiced in favor of the Durhams. Some think a cross of the two may be profitable. The half blood Hereford bull calves sell all the way from ten to fifty dollars, when from one to four months old. As yet we have not had sufficient time to test this blood for dairy purposes; but some half blood heifers that came in last spring, appear well for this purpose, and cannot be purchased for less than fifty dollars. No special attention is given to the improvement of other stock."

FROM NATHANIEL HOOPER.

"Considerable attention has been paid, in Cambridge, within a few years, to raising improved breeds of stock, and we have some very good animals of the Durham and Hereford breeds; but the Durhams are the most esteemed. In the improvement of sheep, nothing has been done. The Suffolk breed of swine are generally the most esteemed among us. Many of our best farmers raise pork for market, which they think, at present prices, can be raised at a good profit."

FROM W. H. POWERS.

"The Durham cattle have been introduced into the town of Bridgton in a few instances. There is a difference of opinion as to their merits. Suffolk swine have also been introduced, in a few cases, and thus far promise well. We have a mixture of about all the breeds of sheep that at different times have been in the country; but no distinct breeds are bred here, that I am aware of. Sheep are worth from two to four dollars per head. We have no particular breed of swine that is pure blood, except, *perhaps*, the Suffolk; but they are a mixture of Berkshire and Suffolk, with a sprinkling of the "Landpike," and some other breeds. Pork cannot be grown at a profit, further than sufficient to consume the refuse and unsaleable products of the farm."

FROM S. F. PERLEY, NAPLES.

"Much care is used in selecting the best animals for breeders, by some of our farmers; and a few blood animals have been brought into town; but for the most part, little thought or attention is given to the subject. We cannot be said to have paid "special attention" to this branch of husbandry. Very few sheep are now kept in town, and those few of ordinary quality."

FROM E. B. RANDALL.

"Some attention is paid to raising good oxen in Limington. The Durhams are most esteemed for oxen, and the Devons or native breeds for dairy purposes. We have no pure blood sheep. We have a good native breed for lambs, which gives us more profit by selling early than by any other mode we have tried. Lambs are worth from two and one-half to three dollars. Common sheep, in the fall, are worth from two to three dollars. We have a breed of swine, now called, with us, the Brighton hog, which is most esteemed. Pork can be grown at eight or ten cents per pound, and if a plenty of muck is furnished them, the whole business will pay and leave a grease spot."

FROM HENRY HOBBS, HOPE.

"In regard to swine, I do not know what to say. The truth is, we buy anything we can, for a pig, in the spring, without much reference to breed or quality. I think pork can be raised at a profit, though I don't believe it *is* in this town. Before the rot seized our potatoes, we wintered from one to four shoats; since that time, but few keep any. If we would now raise, instead of potatoes, turnips or carrots, or peas and oats mixed, and grind them to winter our shoats on, and in the summer give them the refuse of the dairy, with some Indian meal and corn, and in the meantime, make all the manure we can with them, by putting into their pens, litter, muck, and the like, I think pork will pay and leave a profit."

FROM B. F. EASTMAN, PHILLIPS.

"But little special attention is paid to raising improved breeds of domestic animals. Several nice bulls, about one half Durham, have been kept in town. The French Merino are, or would be, undoubtedly, the best sheep for our locality, if we had them; but there are none such in town. Our best flocks of sheep are about one-half Merino, mixed with the native for the other half. Such flocks, last fall, were worth three dollars per head. A cross of the Suffolk and Mackey, we think, are the best swine. Pork cannot be grown at a profit to sell, when produce commands the prices it has for a few years past."

FROM CAMDEN.

"Some attention has been given to raising improved breeds of cattle, or rather to improving our native breed by crossing with the Durhams. In this way we have raised some very fine animals, although many prefer our native stock to the other. But little stock, however, is raised in this town, but that little from the best animals. Therefore our stock, though mostly native, will compare favorably with most towns in this section of the State. I am not prepared to say what are the best breeds of sheep. Common sheep are worth from two to three dollars per head. Various opinions exist in regard to swine. My opinion is, that the breed known among as the Newbury Whites, are preferable to any other. Pork can be grown at a profit when a part of the feed is raised by the grower."

FROM W. R. FLINT, ANSON.

"All kinds of domestic animals have been improved by importation from abroad of the males. Of horses, the Messengers and Morgans stand ahead. One is owned in Winthrop, raised in this town, called the Eaton horse, and two by Daniel Beal, Esq., of Farmington Falls. They are generally of a sorrel color. The Durhams among cattle, are permanently fixed here, and it is not extravagant to say, they have added thirty per cent. to the weight and value of our stock. Among hogs, the Suffolks are preferred, they come to maturity early, and are extensively propagated. Of sheep, the Spanish and French Merino are esteemed for wool, adding the finest quality to the heaviest fleeces. It is believed the higher grades of these animals are the best sheep in the world. This town can furnish the best in the State, in quite large numbers. The bucks are valued all the way from five to one hundred dollars each. Their fleeces weigh from six to twelve pounds when washed. They are naturally peaceable and docile, and therefore easily kept in their enclosure. A good French ewe will weigh alive, one hundred and twenty pounds, and the bucks from one hundred and fifty to two hundred pounds. The Spanish are one-third smaller and not so good nurses for the lambs."

FROM JOHN S. MURCH.

"Farmers in Dayton have recently paid more attention to the improvement of domestic animals than formerly. Our native breeds are generally preferred, which have been considerably improved, and is probably capable of still greater improvement. Among neat stock some prefer a cross of the Durham to the pure natives. Farmer's should pay particular attention to breeding in all their animals, from the noble horse to the chickens.

There are but few sheep kept in town. The native breeds are most highly esteemed. They are worth about three dollars per head. Among swine, a cross of the Suffolk and Newbury Whites is esteemed by some, and some like a sprinkling of the Berkshire. Our breed is so mixed up, that in most cases, farmers can hardly tell the name of the breed. I believe the experiment has never been fairly and fully tried, to determine whether pork can be raised at a profit or not. Some give it as their opinion, that it can, if corn can be had at a reasonable price, and the hogs are supplied with materials to make manure."

FROM ELIJAH BARRELL, GREENE.

"For many years the attention of the farmers in the county of Kennebec has been turned to the subject of improving the breed of animals. The high prices obtained at the exhibition of these animals at our fair, has awakened a spirit of imitation, and we now have some of the finest Durhams in the State, and this breed all prefer, with us. We now have none of the best breeds of sheep. I once kept a flock of fine wooled sheep, as did also, many of my neighbors. The best sheep for wool are the French Merinos. At the present day, as mutton has advanced in price, it may be questionable whether the larger breeds, with coarser fleeces, and more certainty of rearing their lambs, may not bring a better return to the farmer. Their prices vary from five to seven dollars.

The kind of swine now most inquired for, is the Suffolk. I give it as my opinion that a cross of Suffolk and Berkshire will be found to be the most profitable. The first is too small, and the latter not small enough. To a limited extent, pork can be raised profitably."

FROM DARIUS FORBES, PARIS.

"I send you herewith the result of an experiment in raising pork, made with accuracy, by actual account, on purpose to determine whether it could be grown to a profit.

It was of two pigs, (a sow and barrow,) half Suffolk, raised by me and sold April 29th, 1855, to Abijah Hall, Esq., of South Paris. They were then six weeks old, and the sow weighed *seven and one-fourth* pounds, and the *barrow six and three-fourth pounds*—united weight, *fourteen pounds.* They were fed mostly on corn, which was purchased for the purpose, and charged at cost, which was from *one dollar and twelve and one-half cents*, to *one dollar and twenty-five cents* per bushel. They had ten bushels of small potatoes charged at *twenty-five cents* per bushel. In addition to this, which was *not* charged, they had the slops from the kitchen, which amounted to very little as his family was small and he had no dairy or farm. In two weeks after being purchased, they weighed *twenty-eight and one-half* pounds.

On the 20th day of November, they were slaughtered, and the two weighed five hundred and ninety-nine pounds. The account stands thus:

	Dr.		
Cost of the two pigs,			$5 00
Cost of keeping,			42 34
			$47 34
	Cr.		
The sow pig, 278 lbs.,		*a* 10 cts.	$27 80
The barrow pig, 321 lbs.,		"	32 10
			$59 90
Net profit,		$12 56	

The manure made by them, was ample renumeration for the labor of taking care of them.

From this statement it appears, that the pork cost a fraction less than eight cents per pound, at the high rates at which the feed was purchased. If this can be done in such circumstances, is it supposable, that the farmers, on the waste of their farms and less expensive feed, cannot raise pork at a fair profit?"

[The general tenor of what has been received on the subject of stock, together with what I have seen of the statements of competitors at our Shows, suggests the idea that the attempts at improvement which are being made by *some* of our farmers, by an apparently indiscriminate crossing of breeds, are injudicious, and will probably result in failure. The better way is, after selecting Devons, Short Horns, or others, to keep the grades of each breed measurably distinct, as a careless mixing up would probably soon result in mongrels, no whit better than our natives now are.]

Fruit.

That the State of Maine is well adapted to the profitable culture of fruit has long been demonstrated, yet its importance as a leading branch of husbandry is just beginning to be felt, and corresponding exertions to be made. The early settlers brought with them seeds, and thousands of orchards were the result; but not being grafted, the fruit was generally inferior, and mostly used for the manufacture of cider which then found a ready market at remunerating prices. Among the great number of seedling trees thus grown are to be found some bearing fruit of high excellence and well deserving extensive propagation. At a later period, as the value of good table fruit became gradually appreciated, attention was given to grafting the old orchards with choice varieties, and to the planting of new ones with trees properly budded or grafted in the nursery, but the progress was very slow until a comparatively recent date. The replies now show that fruit culture has received an impetus, the effects of which must ere long be felt in the production of increased quantities, and of consequent profit to the growers; though it is to be feared that not all the attempts made will meet with success, as large numbers of trees brought from western nurseries have been sold in various sections of the State, many of which, there is reason to believe, are not only of kinds unsuited to our climate, but do not possess other requisites to success. The expediency of planting these was the subject under consideration at one of the evening conversational meetings of the Board of Agriculture, last winter, in which members of the Legislature and others participated, and by all who had tried them, with one or two exceptions, they were condemned in unqualified terms as worse than worthless. It is obvious that such must be the case with any trees, unless they are possessed of *all the necessary requisites to success*, as otherwise, they will prove not only profitless, but yield actual disappointment, loss of money and labor, and what is more, of valuable years, which no money can replace.

Serious doubts have at times been entertained by many, lest the market for fruit should become overstocked, and the price fall below the cost of production. The fact that the production of choice fruit in New England, has increased so rapidly, that the porportionate quantity of *good* fruit now grown to each person, is probably not less than a hundred fold greater than fifty years ago, and yet the demand is greater and steadier and at higher prices than then, is perhaps sufficient to quiet any such apprehensions for the future, yet other considerations are not wanting.

The value of fruit as a healthful staple article of diet, as *food*, has yet scarcely begun to be appreciated, or else has been long forgotten. It has been indulged in hitherto rather as a luxury. Its value as food is, to say the least, strongly hinted at in the Scriptural account of the Garden of Eden, in which we are told that the Lord God planted every tree "good for food," while grains and roots are not even mentioned. The home consumption of fruit, it is believed, is yet to increase very largely. Foreign markets, also, are open to us, and as is now well known, Maine grown apples have a firmer texture, a higher flavor, and will keep longer than those grown in States farther south, which gives us an advantage in exportation. Such are now the facilities of intercourse, that a short time suffices to carry goods whither we will, and Europe alone is now ready to take all the fruit which could be grown in Maine, even if every acre fit for its production, were stocked with bearing trees. Taking these things into consideration, we have no hesitation in saying, (the failure of the present year to the contrary, notwithstanding,) that no surer or more profitable crop can be grown. Says a thoroughly practical man: "At the lowest rate of product that any man in his senses would estimate as a common crop, an apple orchard would give four times the amount of profit as the same quantity of land in grass for hay, and with less cost for cultivation," and it is doubtless fully true of lands adapted to fruit culture, though we have some soils, as strong clayey loams, better for hay than for fruit. Many farmers now realize more money from the sales of their fruit, than from all the other products of the farm. Some towns report sales of four thousand barrels per annum, to go away, and this might easily be increased ten-fold; indeed, there are few towns in which any are grown where this might not be done.

But if there was no market whatever, such is the value of apples for feeding to horses, cattle, and swine, that no farmer can afford to be without a large orchard for this purpose alone, nor to care well for it, if he has one. At a very moderate estimate, a hundred trees of productive varieties of sweet apples, will yield, one year with another, ten bushels each, and at a cost not exceeding fifty to seventy-five dollars, say five to seven and one-half cents per bushel. Of their value for stock, we have not such accurate and careful experiments as to be able to speak positively of their precise value, compared with other food, but the opinions of those who have tried them, though varying somewhat, is on the whole, decidedly favorable, and we find it more favorable in proportion to actual and extensive experience. While the refuse of natural or seedling fruit is of little worth, rich sweet apples (and these are as cheaply grown as any,) are rarely considered of less value than potatoes, and often of greater.

In reply to the question in the circular on this point, eighteen towns say, "don't know;" one, "a third of the value of potatoes;" another, "half;" and others, "as good as ruta bagas;" "fifteen cents per bushel;" "good, but better for milk than for flesh;" while from many towns known to produce largely, "twenty to twenty-five cents per bushel;" "twenty to twenty-five cents per bushel for horses;" "one-sixth as much as corn for swine;" "fully equal to potatoes;" "as good or better than potatoes, either for milk or flesh," &c. One more in detail is as follows: "The cultivation of fruit in a common way, without much attention to quality, has been extensive from early settlement. Many of the old orchards have passed their prime and been in part or wholly, replaced by new, or made over by grafting within this generation. Of late, new orchards have been set somewhat extensively but not as yet productive. Baldwins, Russets, Pearmains, Greenings, Ribston Pippins, Seek-no-further, Pound Sweet, Early Bough, Golden Sweet, and so on to the number of some fifty kinds, all having their advocates for this or that quality not found in any other. Still we are doing but little, and that as yet, to little advantage. Something is being done in the way of cherries and plums, to take the place of the fruit nearly extinct, and with good success so far, with plums, but unsuccessful with cherries and pears. The winter is too hard, or we have not got the right method of preparing the ground, or of fitting them for the winter; most of our people want them to take care of themselves. A few grape vines about here are now doing well, but have not been tried long enough to test them.

"Apples for stock are deemed worth about two-thirds as much as potatoes, by some more, and others less. For hogs they are worth more to feed to store hogs than for fatting, and are now used mostly raw, even preferred in that state. If fed to fatten swine they are cooked, so as to apply meal plentifully, or they will not raise the flesh very high. Sweet are best for any use. Apples are good feed for horses as well as horned cattle. We raise fruit here, much as we do other things, try, to do too much and do not try enough, to do only what can be done well."

On the score of profit in growing fruit, opinions vary but little, nearly two-thirds answering that it is "profitable;" about one third say "very profitable," and the balance speak of it as "the most profitable crop grown." With regard to the best varieties for our soil and climate, I append a list of such as have been recommended by the Maine Pomological Society. It is the result of conference and discussion, at several meetings held for the purpose, at which many of the best cultivators from all parts of the State were present, and the merits and demerits of each freely canvassed, and will, it is hoped, prove of value as a guide, to many who have not been able to bestow personal investigation:

List recommended for general use.

Baldwin, Roxbury Russet, (when grafted into large trees—do not usually succeed when grafted in young trees in the nursery.) Sopsavine or Bells Early, Porter, Early Sweet Bough, Bellflower, Danvers Winter Sweet, Winthrop Greening, Ribstone Pippin, Rhode Island Greening, Hubbardston Nonsuch.

And the following were recommended as of high promise and worthy extensive trial:

American Summer Pearmain, Benoni, Duchess of Oldenburg, Red Astrachan, William's Favorite, Fameuse, Gravenstein, Minister, Nodhead.

List of Plums recommended for general cultivation:

Imperial Gage, Lombard, Yellow Gage, Drap d'Or, Ives' Seedling, Washington, McLaughlin, Green Gage, Smith's Orleans, Washington.

Recommended for extensive trial, as of high promise:

Reine Claude de Bavay, Purple Favorite, Lawrence's Favorite, Bleeker's Gage, Coe's Golden Drop, Jefferson.

Time failed to go through all the fruits, and it is to be hoped that the lists may, at some future meeting, receive such additions as may make them sufficiently full to give all needful varieties, from the earliest to the latest, in the various species adapted to the soil and climate of our State.

In anticipation of such additions, the following are named as the result of some observation and experience as probably among those worthy to be added:

Pears.

Doyenne d'Ete, Madaleine, Beurre d'Amalis, Doyenne Boussock, Fulton, Belle Lucrative, Rostiezer, Buffum, Urbaniste, Flemish Beauty, Onondago, McLaughlin, Beurre d Anjou, Vicar of Winkfield, Lawrence, Louise Bonne de Jersey.

Cherries.

American Amber, Black Eagle, Elton, Late Duke, May Duke.

Grapes.

Concord, Diana, Delaware, Clinton, Hartford Prolific, Rebecca.

FROM GEORGE BEARCE.

"Greater attention is paid to the cultivation of fruit than formerly, in Minot. Our soil is well adapted to fruit-growing, and we have some fine bearing orchards. We also have many young orchards, which are in a flourishing condition. We think the orchards made of trees grown in our own State, are in a more prosperous condition than those composed of trees brought from New York and other States. Fruit-growing is considered profitable, compared with other crops. Greenings, Baldwins, and Roxbury Russets, are the most prominent kinds of apples grown with us."

FROM LEONARD STROUT.

"There is increasing attention paid to the culture of fruit in Limington, to which our soil is admirably adapted. While valuable fruits are doing so well in market as they now are, there can be no doubt that their culture will be a profitable business, probably the best in which the farmer can engage. Let no one venture on it, however, without thinking it requires labor and care. The varieties that are most esteemed, are the Baldwin, Rhode Island Greening, Roxbury Russet, Red Pearmain, Blue Pearmain, Nodhead, Hubbardston Nonsuch, Williams' Favorite, and Orange Sweet. I have no hesitation in saying that sweet apples, or a part sweet and sour, are equal, bushel for bushel, to potatoes, to feed either to stock or swine."

FROM J. FLINT, JR., BALDWIN.

"The cultivation of fruit is receiving great attention. It is the most profitable branch of business we follow. The apple is nearly as well adapted to our mountain soil, as the oak and maple. It needs no cultivation, except a little pruning; no manuring is necessary. Our apples, if not as large and fair as those grown in richer soils, have full as fine a flavor, and superior keeping qualities. Indeed, in both these respects, they are superior to those of other States. If the price of apples should remain as high as at present, fruit growing will eventually enrich us greatly. The Baldwin, Greening, and Russet, are our principal varieties. We have many others of less importance."

FROM M. H. FRENCH.

"Considerable attention is now beginning to be paid to the raising of ruit in Corinth. Our orchards are becoming engrafted with the best of fruit, and those who are setting out young trees, see to it that they have the best of grafted trees. The prospect now is, that we are soon to have a plenty of good fruit. Plums have been cultivated to considerable extent, but they bid fair to be a failure, the curculio having destroyed the most of them this season. We think fruit-growing is quite as profitable as any other crop whatever, and we have no fears that it will fail for want of a market."

FROM JOHN ROGERS.

"We are giving a good deal of attention to the raising of fruit, more especially apples and pears. Many orchards have been planted within a few years. The varieties of apples mostly cultivated in this vicinity, are the Sweet Bough, Orange Sweet, Porter, Baldwin, R. I. Greening, Hubbardston Nonsuch, Roxbury Russet. These are the most profitable to grow for market. It is thought that apple-growing, at the small price of one dollar per barrel, is more profitable than any other pursuit connected with the tilling of the soil. The varieties of pears mostly cultivated are the Bartlett, the Beurre d'Amalis, Louise Bonne de Jersey, Duchess d'Angouleme, and Vicar of Winkfield. These varieties do well on pear stocks, or on the quince. They grow to a very large size, and produce good crops, and the fruit in general is remarkably fair. I think sweet apples are worth more than potatoes for stock and swine. Boiled with pumpkins, they are especially valuable for swine."

FROM JAMES M. SHAW.

"Considerable attention is paid to the cultivation of fruit, particularly the apple, in Waterford. With good care and cultivation, and a fair market, the apple is probably the most profitable crop we can cultivate. The varieties most esteemed, are the Baldwin, Ribstone Pippin, Russet, Porter, &c. The more modern varieties are not generally known. The Black Apple, Northern Spy, Hubbardston Nonsuch, Hurlbut, Mother, Gravenstein, and some others, are highly esteemed by those who cultivate them. Cherries, Plums, and Pears, are cultivated to a limited extent."

FROM S. F. PERLEY.

"Apples are the only fruit cultivated to any considerable extent in Naples. The old seedling orchards, yielding fruit fit only for a poor quality of cider, are fast disappearing, and their places are supplied with choice varieties of market fruit, among which the Baldwin holds the first rank as to profit. It is a good bearer, and commands a ready sale, especially for shipping, and a good price, when well prepared for market."

FROM B. F. EASTMAN.

"Many of our farmers, say one-fourth, have apple orchards, and the most of them have a portion of the trees engrafted. We are too far from market to make it very profitable to raise fruit. The varieties most highly esteemed, are the Baldwin and Roxbury Russet. We esteem apples for stock and hogs very highly. My hogs have but little else than apples and the slops from the kitchen, during the winter. I keep them frozen, and merely thaw them in a kettle for this purpose. I do not allow the water to boil. I also give them to my sheep in a frozen state, and I believe them as good as the same amount of potatoes."

FROM JOHN S. MURCH.

"Some attention has been paid to renovating or re-topping old apple trees, and much remains to be done. When trees are in good condition, and properly operated on and managed, they are increased in value, perhaps fourfold, and are probably as profitable as any other crop. Some are setting young trees; but aside from this, there is but little done in Dayton, in the fruit line. For winter use, the Baldwin stands at the head. The Rhode Island Greening, Nonsuch, and Roxbury Russet, are much esteemed. The old Nonsuch is preferred to the Baldwin. Some writers represent it as a poor grower, but with us it is a vigorous grower and good bearer. The Roxbury Russet keeps well, but as a drawback, they are apt to grow gnarly. Some graft largely with the Golden Russet. They are good growers, bear well, keep well, and are of a good flavor, but of small size. For autumn use, the Porter and Baker's Sweet are most generally cultivated. Grape vines thrive well on our rocky soils. Apples, I believe, are thought to be worth as much for swine as potatoes, particularly sweet apples."

FROM E. B. RANDALL.

"At present, there is great attention paid to fruit growing, and it has been profitable. The varieties generally cultivated are the Baldwin, Rhode Island Greening, Roxbury Russet, Hubbardston Nonsuch, Williams' Favorite, Early Sweet Bough, Porter, and a host of others. Some pears, plums, cherries, and peaches are cultivated. Apples are estimated to be worth as much for stock or hogs as potatoes, either for milk or flesh. I have used apples for fattening beef and pork for family use, a number of years, with good success. They make good fat, sweet meat, and larger than mere corn-fed animals, and are equally good if fed on corn fifteen days previous to killing, which hardens the flesh, and yellows the fat of beef. Apples are excellent food in the winter, with dry hay, for cattle, sheep, and horses."

FROM ORRIN FULLER.

"There is increased attention given to the cultivation of fruit in Lagrange. It is, perhaps, as profitable as any other branch of farming. The apples I should recommend for cultivation are the Summer Sweet,

Sweet Bough, Sopsavine, Early Strawberry, Porter, Killam, Hill, Rhode Island Greening, Pecker, Baldwin, which, however, is not a good bearer with us, the Blue Pearmain, Vermont Pearmain or Harvey, English Russet, which is a great bearer with us, the Roxbury Russet for its long keeping qualities, though it is a shy bearer in our locality. We have several other kinds that promise fair, but have not been fully proved. Pears have been but little cultivated, but they promise well. Plums do well, but we are annoyed with that little pest, the curculio. Cherries are raised almost without cost."

FROM W. D. DANA, PERRY.

"Fruit culture is in its infancy. Of its profitableness, nothing can yet be asserted. Apples, plums and cherries are all that have yet been tried. The apple and plum do well, producing even here among the fogs of 'Quoddy Bay, as fine specimens as one need wish for. An encouraging fact in reference to fruit culture is, that a few nurseries have been started among us, two in this town and one in Robbinston, and we hope the day is not distant, when the disappointment which some have experienced by getting trees from distant nurseries and irreponsible individuals, will be counterbalanced by the success of trees raised in their own climate, and adapted to their own soil."

FROM ELIJAH BARRELL, GREENE.

"Apples are an important item of our farm produce. Old orchards are being better cared for, their fruits changed, and extensive orchards are being set out, whilst we have the varieties most approved; our Baldwins and Greenings find the most ready sale for shipping. Ordinary apples are used for swine; those who have them, winter growing swine on them. For this purpose their value is nearly equal to potatoes, but for stock no satisfactory experiment has been tried."

FROM WILLIAM GREGG, FREEPORT.

"Fruit growing is increasing, there is considerable interest on the subject, and our town is much indebted to Nathan Nye, Esq., for his example and his zeal in the cause. The varieties most cultivated are Greenings and Baldwins, most of the modern varieties are being planted. The cultivation of pears is beginning to receive some attention. Many of the families of the town now have one or more grape vines and their culture is extending."

Cranberries.

These have been cultivated to but limited extent, and little seems to be generally known or thought about them as a source of income. This is the more to be regretted, as we have thousands of acres which at a very moderate outlay, compared with the profit to be derived from their culture, might be made to yield a generous return. The cost of preparing the land and planting, would probably vary with the location and circumstances attending each case, from one to three hundred dollars per acre, and when properly done and in bearing, should yield from two to four hundred dollars worth per annum, or *even more.* In one instance mention is made in a reply to the question of the circular, of a cranberry meadow, of seventy-five acres, in the town of Bradley, from which it is supposed a profit will be derived this year of one thousand five hundred dollars, but it is not stated whether they are cultivated or grow naturally. Several cases of somewhat extensive experiments in their culture, have been heard of, but I have failed to obtain statements as to the modes practiced, or results obtained.

Obstacles to Agriculture in Maine. Lumbering—Emigration.

Wealth of forest and of mine have ever had a retarding influence upon agriculture; not that there is anything intrinsically antagonistic, for the support of the miner and of the forester, must be drawn from the soil by the husbandman. But the prospect of more speedy and perhaps larger returns, added to the greater excitement attending such labor, has ever proved efficacious temptations to exchange the quiet labor of the farm for the other, and there can be no doubt that agriculture in Maine has felt this influence in large degree.

The replies to the questions of the circular, as to the influence of lumbering, and the extent and causes of emigration, are too few and too meagre to furnish anything like statistical information, yet some are highly suggestive and as such will be introduced.

Several answer in regard to lumbering, that its effect is favorable, inasmuch as it makes a good market for agricultural produce, and so far as it operates thus, no one will hesitate to admit that it should rank with other industrial pursuits. A few reply that they can scarce get a living without it, as it furnishes profitable employment for themselves and their cattle in winter, when the labors of cultivation are suspended; and to this perhaps no valid objection can be made: but more than four-fifths of the replies are, that its influence is "bad," "deleterious," "hurtful;" and one replies briefly and strongly, "it is death! death! to it." It is to be regretted that the opinions thus expressed were not oftener accompanied with the reasons therefor. So far as they are apparent, it appears to arise chiefly from an attempt to pursue at once both lumbering and farming, the result of which usually is, that the farm is neglected and runs to waste. The returns from the lumber are more speedy and thus very deceptive, due allowance, being rarely made for the waste of manure, for lost time which might be turned to good account in preparing for spring labors, or in storing the mind with useful knowledge,* or for the fatigue and exhaustion of both men and cattle, so that the labors of the farm are not entered upon or pursued with cheerful alacrity. Very often the habit is acquired of running up long scores at the store where the trading is done, which rarely show a balance in favor of the farmer, but be the reasons what they may, there can be no doubt of the fact, that wherever and whenever dependence upon the forest ceases, the farms begin to amend at once, and the soil proves itself, though perhaps somewhat slower in its returns, a much surer and more reliable source of income.

A correspondent writing from a largely lumbering district, says:

"I cannot satisfy my own mind as to the influences of the lumbering operations on agriculture. They enhance the price of labor so that farmers can scarce afford to hire. They also enhance the price of produce. They tend to make men dissatisfied with the slow returns of agriculture, and so far as farmers are led to neglect their legitimate business by engaging in them, their influence must be bad. Whether on the whole, agriculture gains as much by the market which lumbering furnishes, as it loses by the neglect and dissatisfaction caused by it, is a question worth investigating. Its influence upon the manners and morals of our young men is less doubtful, as is fully manifested by the numbers loafing about shops and corners, smoking, swaggering, and swearing. Some of our cities, like Bangor and Calais, have grown up by lumber. Have they been the means of improving the agriculture of their vicinities?"

---

*In this connection I am reminded of a remark by a correspondent, who after replying to the query as to the influence of lumbering, says: "but the greatest obstacle to better farming among us is the want of knowledge; we would do better if we could, but don't know how. When I was young there was no way to get education, especially on farming, except at the tail of the plough, and so we have to keep step to the old tracks. But our young men are rousing up and ask for something better, and if your Board can lend them a helping hand don't fail to do it."

This certainly corroborates the views advanced on the thirty-first page, as to the utility of efforts aimed at the diffusion of knowledge among agriculturists.

Another in one of the Saco river towns, says:

"The lumbering business is not much carried on now, for want of the material. Formerly, this was a great lumber region, and its influence upon agriculture was most pernicious. And so it must always be, where the same person undertakes to be both farmer and lumberman. The towns of Fryeburg, Lovell, Sweden, Denmark, and Brownfield, were, fifty years ago, equal to any in the State for the growth of pine timber, and I suppose, that without exception, every farmer who engaged in lumbering, grew poor under the operation, and many within my personal knowledge, had to mortgage, and some lost their farms by it."

A correspondent in the valley of the Kennebec says:

"One-half of all the lumbering on the Kennebec is fitted out from this village, and makes a market for most of the surplus grain raised, and consumes considerable of foreign growth. Indeed it may as well be said that all the grain, or other supplies, taken from our producers, has to be returned in some form from that raised west. Although this business has employed a good many men it is an irregular employment, lasting not more than half the year, the balance of which is too often wasted, sometimes worse than wasted. Less lumbering would cause more emigrating and perhaps more farming; which of these two tendencies would preponderate would depend on circumstances, and it would be hard to predict. As a State, it is plain that it would add more to our solid capital to cut no more lumber than could be cut within our own resources; but in this, as in our foreign importations, individual interest will not look to the public good, nor always to its own remote and highest advantage. On the whole, it may be confidently said that large income, whether in mining or lumbering, or in any other department of enterprise, even though it be attended with equally large risk of failure, operate to the detriment of all branches like farming.

More than fifty men, mostly young, and without families, have been to California since 1850. Three-fourths have returned, They went to get money faster than they could at home. Some of those there have their families with them, and will remain. perhaps, for life. A few have gone to the Western States to live easier, or settle a family of children to advantage; but the tide to California, and also to the West, is now staid for the present and we have quite room enough for all that are left. The fever to emigrate West has reduced the price of real estate, in this county more than ten per cent. within five years, though there is just now, say for one year, a slight counter movement, more apparent in some towns than in others. The present general unfavorable prospect of the crop this year may check that tendency, or an unfavorable prospect West, for high prices, may leave us "in statu quo."

Another on the same river says:

"Lumbering has been carried on largely up the river, and has drawn off labor from agricultural pursuits, greatly to their disadvantage, and to the damage of the community. Much emigration from here to the West, not extensively in families, but mostly young men, called off by the unusual but probably ephemeral high prices of breadstuffs and pork. Large numbers go to California."

One residing in an eastern seaboard town, says:

"There have emigrated from this town since 1850, as near as I can ascertain, six persons to California—of whom one died there, one returned with money enough to clear a mortgage off his farm, one is there now, and three returned no richer than they went. Four have gone to sea, fifteen to Minnesota, four families to other parts of the State. They went because they became discouraged or dissatisfied, not content with getting *only* a living, and they resolved to go where there could, or thought they could, do better.

One other Californian returned with some money and some fever and ague. Many of our people, especially the young men, are accustomed to work in the ship yards of the adjoining towns, and in good times, so called, get high wages, consequently acquire a disgust for the quiet labors, and as they suppose, small profits of the farm, and in times like the present, when ship building is dull, they become dissatisfied, complain of the country, and start for Minnesota, hence the large emigration this spring.

"But I think the real cause of the immense emigration, which is so thinning our eastern towns, lies deeper than we are apt to think. The complaints made have real grounds. It *is* hard for a man to support a family here by labor. If he *can* get in debt he is almost sure to become inextricably involved. His labor will not enable him to pay for a farm if he takes one. At the west it is supposed to be different. Now why is all this difficulty and what is the remedy? "Poor Richard" told us the whole matter years ago. "The eyes of other people ruin us." "What will people say" if farmer A. should appear at church in plainer garb than farmer B., whose income is twice as much, and who in times past, while striving for an honest independence, subjected himself to charges of meanness, and his daughter to slights and insults for wearing a bonnet which had been wintered over. "What will people say" if our parlor has less costly furniture than the trader's, or the dining room floor is not carpeted. In short, "what will people say," if the frog does not swell *quite up* to the size of the ox.

"Now is there any remedy for this state of things? Can we live here at the east, in a simple, plain manner, according to our means, and retain our standing in society? I think not. A man moves to the west; himself and family can content themselves and be respected by their neighbors, in a house of two rooms, furniture enough only for use, none for show, and wardrobe comfortable rather than costly. I hold that all wealth is the product of labor; even the forest and the soil are not wealth till labor gives them a value. If this be true, those who labor with their hands support the community. If the classes who live by mental labor, or by no labor, or even by manual labor which produces nothing, as those who "buy and sell and get gain," are in greater numbers than the community needs; if they must live in a most expensive style, it seems evident that the laborer must work proportionally more hours, and have for himself a less proportion of what he produces.

"I did not intend to write a treatise on political economy, but somehow, in my rambling mode of writing, I ran into it, in trying to show that the farmer and mechanic at the east have to support, not only the extravagance which may possibly exist in his own family, but also that of the very large class of non-producers. At the west he will not long escape the same inconveniences. Presidents must be made; Congressmen must have champaigne, pistols, and sticks; the mails must be loaded with buncomb speeches; the fighting apparatus, army and navy, must be supported, and men, women and children must live *fast*. For all these things the west as well as the east must soon help to pay. Disguise, hide, smooth over the fact as we may, the working man must in some way or other, pay the bills."

I will introduce but one quotation more, and this from a town in Piscataquis county:

"Lumbering no doubt has had a deleterious effect in retarding a judicious course of farming among us. True, our market has been hereby principally created, but it has ever been so fluctuating in its demands that we have always found it unreliable; whereas, if our farmers were devoted to the growth of wool or meat mainly, all our hay, grain, roots, &c., would hereby be consumed on the farm, and the crop would readily find a market, if not at our own doors, yet not far distant.

As to the number of persons engaged in agricultural pursuits, who have moved from our town since 1850, I am not able, without considerable trouble, to speak accurately; but for a period of ten years, the time I have lived in town, there have one hundred and seventy-four of the above named class emigrated, and much the greater part have left within the last five years. Besides, many others who followed other pursuits have also left, so that the entire emigration from our town would not fall far short of three hundred during the time specified. Some sixty or seventy of these emigrants have gone to the western States, many to Massachusetts, a few to California, and the rest, the Lord knows where.

Why did they go? Some said they left because Maine was not fit for a farmer to live in, but probably the true cause of emigration is found in an *uneasy, unsettled spirit of speculation*, a ruling desire to find some far-off "land of the leal," wherein they could live and flourish like heroes."

With regard to this last named town, it may not be amiss to say that by the census of 1850 it contained less than eight hundred inhabitants, so that it is clear that from some sections of the State, at least, emigration prevails extensively.

Whatever may be the influences so actively at work among us, and which threaten to carry away so large a portion of our young men, the bone and muscle and future hope of the State, they should be thoroughly probed, and if there be any remedy, it should be applied without delay.

This is not deemed the place to discuss at length, a subject involving the interests of all other classes in the commonwealth not less than of agriculturists, and I will merely remark, that if it be really true that Maine is fit only to emigrate from, we may as well submit to this depopulating process with what grace we can; but it is believed that a candid and critical examination of our facilities for agriculture, commerce and manufactures, will show that not only have we been underrated abroad, but that we ourselves by no means fully appreciate our actual position and resources. Look at the extent of territory, equal to that of the other New England States combined; at the natural fertility of our soil, which may safely challenge comparison with that of the Canadas on the one hand, or of the other New England States on the other; at our navigable streams, fine harbors, (it is not alone the opinion of an ex-President that Maine may yet be *the* commercial State of the Union) and more than six hundred miles (including indentures) of sea coast, at our mineral wealth, our numerous water-falls, the salubrity of our climate, and other resources and advantages, and may we not well ask, before assenting to any such proposition, for substantial evidence that our young men may not do as much good and get as much good in Maine, as any where else on the face of the earth? Other spots may possess greater mineral wealth, or be more fertile, but is gold or grain the *only* consideration to be taken into account in choosing a residence? Is success in living our brief term here, to be measured *only* by dollars or bushels?

We are shown glowing pictures of the fertility of the prairie, and of the wealth of golden sands, but is the *whole* picture fairly drawn? Are the ten thousand discomforts and perils which must be encountered as prominently brought forward? Is lime water for a beverage, or rattlesnakes, or fever and ague, or the many other fevers to which the new comers are exposed, introduced? Is the low price of what is to be sold, the high price of what is to be bought, the distance of markets, or the absence of the school house and the church, dwelt upon? These, and many other drawbacks are usually left quite in the background, to be discovered and *felt* by the emigrant in actual experience, together with the fact that if he had been willing to work as hard, to live as plainly, and to endure half as much at home, he could thrive as rapidly here as there, enjoying all the while in the land of his birth, social, intellectual and religious privileges, and uninterrupted health.

Thus have I very imperfectly gone over the ground as proposed at the outset, and by way of apology for the many defects and short comings, may I not be allowed to plead the somewhat anomalous position of the Secretary for the present year? It will be recollected that the Board of Agriculture for 1856, is the late Executive Committee of the State Agricultural Society, which held its regular session in January last. By virtue of having been chosen its Secretary, I have acted as Secretary of the Board of Agriculture, in performing the duties required by law—that aside from this, the Board has had neither organization nor action, since the enactment of the law creating it, and consequently I have received from it, neither direction nor advice, (although I gratefully acknowlege suggestions and aid from some of its members,) and so I crave your charitable indulgence.

In concluding this report let me say, it is believed that the agencies now in operation within the State, for the promotion of agricultural interests, are in a prosperous condition, and accomplishing, so far as may be reasonably expected from them, the ends aimed at in their establishment, and that the future of our Agriculture, nothwithstanding the many drawbacks which exist, is full of promise from the gratifying evidence which appears, that interest in it is increasing, and efforts are being made more extensively than hitherto, to introduce into its practice, method, skill and capital, those indispensable elements of success.

S. L. GOODALE,

Secretary of the Board of Agriculture.

Jan. 14, 1857.

APPENDIX.

APPENDIX.

A. (*Page* 14.)

Hon. Benjamin Vaughan, LL. D., was educated a physician, though it is not known that he ever practiced medicine. In early life he was a member of the British Parliament, but having fallen under censure for his freely spoken republican opinions, retired to France during the revolutionary war, where he became intimate with Franklin and other Americans, then near that Court. At the close of the war, he, with his younger brother, Charles, emigrated to America, and having landed property on the Kennebec, settled in Hallowell. Charles having received a mercantile education, commenced business with enthusiasm and energy, designing to build up another Liverpool; he erected warehouses, built wharves, &c. But the country was too new to sustain so extensive enterprises, and he was unsuccessful in business.

Dr. Vaughan, a man of wealth, science, and liberality, pursued agriculture and horticulture as a matter of pleasure and taste, rather than of profit. He imported trees, seeds, implements, and workmen, trained to their care and use. By some who could not perceive why expense should be thus freely incurred without certain prospect of ample and immediate return in money value, he was sneered at as a book farmer and visionary schemer. Others more shrewd and considerate, looked on with pleasure, and availed themselves of the advantages to be derived from his liberal expenditures, importations, library, conversation, &c. At a later period, Charles imported sheep, South Downs and New Leicesters, into Hallowell. The fruit of their labors is plainly visible throughout a large section.

B. (*Page* 21.)

REPORT OF COMMITTEE.

In Board of Agriculture, State of Maine.

The Committee to whom was referred the questions, "What is the real want of Agriculture in this State, at this time? How is this want to be met?"—with sundry resolutions partaking of the nature of instructions, having had the subject under consideration, and given it all the thought their time and circumstances would admit, beg leave to report as follows:—

In taking into consideration the condition of the agricultural interests of the State, one of the first things that attracts our attention, is the paucity of fertilizers. This fact forces itself on our attention equally, whether we ramble over the cultivated fields of the State, or interrogate the operators themselves. Ask the farmers in every neighborhood, and in every part of the State—What do you most need to make your operations in the highest degree successful? and the uniform and unvarying reply will be—more manure—a greater quantity of fertilizers. Thus, is the cry of the tillers of the soil and of the soil itself, going up from one end of the State to the other—*Fertilizers!* FERTILIZERS!! FERTILIZERS!!!—*give us more fertilizing matter!*

All are united in the conviction and admission, that the mere droppings of the domestic animals which can be sustained by any farm, are totally inadequate to meet the demand for fertilizing matter by that farm. And every intelligent farmer knows, that were an entire stop put to the present enormous waste of stable manure, from bleaching, washing, and the neglect of means to save the urine, this source would be totally inadequate to restore our exhausted fields to primitive fertility, much less to the highest state of productiveness, even did such manures contain, in the requisite proportion, all the ingredients required. Every intelligent agriculturist knows, that in the present condition of things, fertilizers must be had from some source aside from the stables, or it is impossible to bring our farms to the highest state of fertility, even if when attained, their fertility can be maintained from this source alone. Hence, every intelligent farmer desires most of all to know,

1. How he can the most economically and successfully increase the quantity of his stable manures, improve their quality, and most effectually and economically apply them to the soil.

2. To what other sources can he look for a supply of fertilizers, aside from his stables, the best adapted to the peculiar wants of his soil, and which will supply them at the least cost.

Now these questions can be effectually solved only by the aid of scientific investigation. We want the aid of Analytical Chemistry to put us on the track and set our faces in the right direction. We need first of all, to know what are the specific wants of our soils; and second, the several sources from which these wants may be supplied, so that farmers, in different localities, may select that source which will supply these wants at the least cost.

Thus the whole matter resolves itself into this: The thing most wanted by the agriculturists of this State, is KNOWLEDGE, knowledge of the scientific principles on which their profession is based. Not that every farmer needs to become an agricultural chemist, but that he needs to know the results to which science points—to be qualified to abandon guess-work, and be guided by knowledge. He needs to know the composition of the soil he cultivates, the manures he applies, and the crops he raises, so that he can adjust the one to the other. And this needs to be known now—the sooner the better—so that he can be availing himself of the benefits of this knowledge. He does not want to wait long years, to have all the suggestions of science tested in detail, before he is permitted to know what these suggestions are, lest he might be disappointed in some of the results. He wants something to help the present generation, as well as to put matters in operation to help future generations. And this knowledge is not only the want of the farmer now but it will be his want in all coming time, and must ever be acquired in the same way. Thus do we answer the first question proposed.

2. HOW SHALL THIS WANT BE MET?—With the answer to the first question distinctly in mind, the general answer to this question readily suggests itself. It is this: It can be met only through the agency of schools of some kind. In this general statement, the intelligence of the State would undoubtedly coincide; but when we come to a specific application, the methods are various. And it seems but just, before presenting the scheme proposed by the committee, to briefly consider the most prominent agencies proposed from various sources, of gaining the proposed end, and some of the principal reasons for their rejection.

I.—*The Common Schools.*

These have been proposed as the first and most prominent agency for the diffusion of a knowledge of agricultural science. Your committee have come to the conclusion, that this is an agency not adapted to secure the ends most needed at the present time, the reasons for which they can only suggest, for the want of time and space.

1. There are already so great a number of studies in our Common Schools, that every thing has to be done in the most shabby and imperfect manner. Nothing is mastered so as to make it available, in any good degree, in actual practice. Even arithmetic, to which more time is devoted than to any other study, and often more than to all others, has to be learned over again after leaving school, in most cases. And grammar—what a wretched exhibition do the letters of our school boys and school girls make of this most eminently useful and practical study? How are all the laws and rules they have committed to memory set at defiance, in almost every sentence? Murder most foul is perpetrated everywhere on the "*President's English.*" And why? Simply because of the multiplicity of studies and classes, which utterly forbid devoting the requisite time to any of them, to secure a thorough and practical exercise and drill. If such be the fact, as every competent supervisor of schools knows it is, what can we expect from adding to this already impracticable list of studies, scientific agriculture?

Nothing, surely, but an increase of the difficulties, already so destructive to the usefulness of our common schools.

2. The teachers are utterly incompetent to give instruction in this science. A knowledge of it has not been demanded as a qualification to become a common school teacher; and were it demanded now, where could our teachers go to obtain the requisite qualifications? And echo answers—*Where?*

3. Agriculture is an abstract and an abstruse science, having to deal with the most obscure and intricate operations of nature. The study of such a science, to make it of any practical value, requires a good degree of intellectual maturity. Is any such cultivation and maturity of mind attained in our common schools, as is necessary to secure such an end? Your committee think they hazard nothing in affirming that no such maturity is found there. Surely, if the most common and most studied branches are so imperfectly mastered in these schools, what must be the result with this most abstruse of sciences? Utter failure, and nothing else.

4. The common schools can by no possibility meet the present wants of the agriculturists of this State, as indicated in our answer to the first question proposed. They have not the first requisite to this end, in any respect whatever. No soils, manures, plants or seeds, can here be analyzed; no suggestions to practical farmers, as to means of improving lands, increasing their fertility or making the productions of their farms more bountiful—increasing the quantity and improving the quality of their manures, or pointing out new sources of fertilizers. All these most important and indispensable agencies for the improvement of agriculture, are here unprovided for; and what is more, there is no possibility of securing them through their agency.

Your Committee would not say, the time may not come, when these schools may attain a condition and position, which will warrant the introduction of agricultural science, as an elementary study; but they do say, that in their opinion, *that time has not yet come.* And they would respectfully suggest, that the line of policy is, first of all, to take measures to put these schools on a very different footing from that on which they now stand, before time or money is spent in attempting to introduce scientific agriculture as a study. And they hardly need add, that, in their opinion, these schools can never, by any possibility, meet the most pressing necessities of the practical agriculturist, in the way of furnishing agricultural knowledge. And more than this: they deem the simple truth to be, that, to begin with our common schools as the first agency for the promotion of agricultural improvement, is to begin at the wrong end—to build without a foundation—to undertake to maintain a stream without a fountain—to attempt to force a most diminutive stream of agricultural knowledge over the heads or under the feet of the present on the future, and that too without any fountain to sustain it—to labor to operate on the future, not merely to the neglect of the most pressing necessities of the present, but of the means of sustaining that operation.

2.—*Academies.*

Some of the objections to the common schools, as an agency to meet the present wants of agriculture, do not lie against well conducted academies. Undoubtedly some good service to the cause of agricultural science, might be secured through their agency, though the difficulty in regard to competent teachers exists here as well as in the common schools; but this difficulty is much more easily overcome here, from the more mature age and extended mental training of the teachers. That there is a possibility of academies meeting the public wants in this regard, in time, is admitted; but here comes in the question of economy, which seems to us a most fatal objection.

In this State, there are about sixty academies in active operation. Suppose we adopt this agency, it would involve the outlay for the construction and furnishing sixty laboratories, beside the liberal endowment of each of them, to enable them to do the work demanded, unembarrassed, and the obtaining of sixty teachers, fully qualified for their work, when there are not five such to be found in the State. Now suppose we can get over all these difficulties—get the money and the teachers—then the question arises, are these sixty laboratories and schools needed to meet the wants of the farmers now or hereafter? It seems to us they would be entirely unnecessary. One or two laboratories and schools in connection, are abundantly sufficient to meet all these wants—to do all the work that will ever be demanded. So that such an outlay is entirely unnecessary. When the means and opportunity for the teachers of our academies to acquire an agricultural education are provided, the elements of agriculture may then be profitably studied, in a somewhat higher phase than in the common schools, the same as mathematics and other studies now are; and this, it seems to your committee, is all that can be expected through their agency.

3.—*Stock Farm, Experimental Farm, or Farm School.*

Probably these several names are used to indicate nearly, if not identically, the same thing. In most minds, such an institution unites a school with general farm operations, in all their varieties, as a mere experimental matter. They contemplate experiments on different breeds of cattle, horses, sheep and swine, to determine what are the best and most profitable for our climate and location; in modes of breeding, raising, and feeding animals for all purposes for which they are required, to ascertain which are the best breeds, and the most effectual and economical methods for the farmers of the State to follow; in multiplying the quantity, improving the quality, and preparing manures for the use of plants, to obtain the largest results at the least cost; in ascertaining the crops most profitable to be cultivated, and the varieties of each the most perfectly adapted to this end; in modes of cultivation, application of manures, selection and preservation of seeds, and in all other matters of interest to farmers. With this is to be connected a school where the *science* of all this is to be taught in connection with the practical farm operations. All this must be had, to secure any practical results of importance.

Your Committee are free to admit, that this is a most magnificent scheme; and were they merely looking for some great and splendid affair, they could not hesitate a moment in determining on its adoption; but they feel they are charged with a duty different from this—to inquire, what would come of this? Is it adapted to the present wants of our farmers? Can it, by any possibility, meet the republican condition of our agriculturists, and generally improve the farming interests? Does it promise any results commensurate with the outlay required?

These are all questions which ought to be answered, and your committee feel constrained to answer them all in the negative, some reasons for which they propose to give.

In the opinion of your committee, it would require an endowment of nearly half a million of dollars to purchase land, erect buildings and machinery, procure tools, import different kinds and varieties of animals and seeds, pay the salaries of teachers, superintendents and laborers, and meet the various incidental expenses of such an establishment. This is a very respectable sum to devote to such a purpose, even for a State; but if it promised any results adapted to our wants and circumstances, proportionate to the outlay, or that could not be as effectually secured, and at less cost, in other ways and by more simple modes, we should be in favor of the outlay; but this is not the fact, as it seems to us.

Such an endowment would afford, at six per cent., an annual income of thirty thousand dollars, and your committee would respectfully submit if the annual appropriation of one half this sum, through the agency of our agricultural societies, in the bestowment of premiums large enough to be an object worthy an effort to obtain, and if it be thought best, for specific objects, would not be likely to secure a greater number and more satisfactory results, than could be attained by any experiments in any *one* locality in the State. We have a great variety of soil, and some considerable variety of climate—enough materially to vitiate an experiment made in one section for another. For example: A breed of stock adapted to the sea-board, is not the best adapted to farmers in the interior. So of field crops. What succeeds best and is the most profitable on the sea-board and on one kind of soil, would be unprofitable or entirely fail in the interior, or on a different soil. Hence it is not possible that such an institution should meet our varied wants as a State, merely in regard to experiments. Nothing short of a trial in all sections of the State, and on all varieties of soil, can make any experiment of general benefit to our agricultural interests.

Another thing. Such an institution cannot possibly furnish facilities for the education of all who are to be farmers in the State. As a necessity, only a select number of persons can enjoy the direct benefits of such an institution. It can bear no other relation to the agricultural interests of the State, than a military or naval school does to the army or navy. And this is *one* most serious objection to such an institution; for its character must of necessity be in the highest degree anti-republican, and totally unadapted to our wants as a people.

If the land was held by a few landholders, and the great mass of the actual laborers tenants, under the direction of these few, as the army and navy are under the direction of the officers, such a school would answer the wants of the agricultural interests of the State; but such is not, thank God, our condition. With us, the *cultivators* of the soil are the *owners* of the soil. We have no great land owners to act as officers to order and direct our agricultural operations, as officers of the army and navy, while the rank and file have nothing to do but obey orders. On the contrary, as now situated, and as *we hope we shall ever be situated*, every farmer in the State holds the position of commander-in-chief, and of course, needs the qualifications for such a position. Hence any arrangement by the State which contemplates anything short of this, is unjust to the interests of the farmers of the State, and anti-republican and aristocratic in its character, and not to be encouraged, much less adopted by the State.

Beside, it is well known to all intelligent men, that large wheels move slowly, and that it will require much longer to attain any practical results through the agency of any such mammoth institution, "dragging its slow length along," than by individual enterprise. And it is very questionable whether, were such an institution established, private enterprise, in all its *experimental* features, would not so far outstrip and distance it, that it would become a kind of "fossil remains" of the *dead* past, instead of the *living* present of "Young America."

Such are some of the objections to such an institution or establishment, in the minds of your committee. And it seems to us, that although some benefits might be derived from stock and experimental farms established in all the principal centres of the State, if conducted by men of precisely the right stamp, the benefits likely to arise therefrom, will not be proportionate to the expense, nor as numerous as could be secured by encouraging individual enterprise. And we can see but one advantage to be derived from such public establishments over individual enterprise, and that is their *permanency*. Individual enterprise usually stops with the death of its manager, while a public institution, in such an event, only changes its manager. But it often happens that a change of manager produces strange revolutions in management, rendering a valuable institution or establishment comparatively worthless.

So much would your committee offer in relation to the several schemes proposed to meet the agricultural wants of the State, preparatory to presenting the one they elaborate in the annexed bill, and in the residue of this report, propose to present some of the most prominent of their reasons for its adoption.

Whoever will carefully inspect the annexed bill, will at once perceive, that it lays the foundation broad and deep and provides equally for the present and the future. To the appropriations it recommends, a principle is adopted which we think ought to be the basis of all appropriations for educational purposes, viz: that all institutions which receive the bounty of the State, should be held to render the State directly a reasonable amount of service therefor, and be subject to some supervision by the State, so that the people may know something about their doings, and what sort of use is made of their money.

While your committee are thoroughly persuaded, that one institution of the kind in this State is amply sufficient to meet all the agricultural wants of the people, both now and in all coming time, so far as scientific investigation is concerned, and the education of teachers and others, they feel that, having two colleges, both of which are doing the cause of literature and science good service in our midst, it would be doing great injustice and wrong to one or the other of these institutions, and inflicting a great injury on the interests of agricultural science in the State, to single out one of them as the State's agent and the object of the State's bounty, to the neglect of the other. Hence we have recommended both of our colleges to the same favor, being firmly persuaded, that in no way, under existing circumstances, could the great interests of agricultural science be so effectually or economically advanced. This might be made to appear in the strongest light, did not time and space forbid. We may suggest, however, before leaving this point, that *competition* will contribute no mean or inefficient agency in securing the highest and most enduring success.

We now call attention to some of the principal reasons which have induced your committee to recommend this scheme, in preference to any other that has been suggested, so far as educational agencies are concerned.

1. It secures all we need and can expect from science, both for the present and the future, and effects it in the most economical manner.

We hardly need suggest to any person who has any knowledge of the subject and the present state of things, that expectations are excited in the minds of a large share of those most interested in agricultural improvement, in relation to what science is to do for this great interest, which can, by no possibility be realized. Hence we beg in the outset, to offer a few suggestions calculated to set this matter right.

In the first place, the chemistry of agriculture is so unlike general chemistry, that it is a distinct science, known by another name. It is called by a specific name—"Organic Chemistry." Why? Because it is affected in its results, by a set of laws unknown to general chemistry. The one deals with dead, inert matter—the other with such matter in connection with living organisms. In the one, the laws of analysis and reconstruction are uniform and unvarying. Analysis shows every element which composes particles of matter, and that these unite in definite proportions, so that we can tell just what will be the result of bringing two substances together under certain given circumstances. If we bring sulphuric acid and lime together under the proper conditions, they will unite and form a sulphate of lime, or plaster of paris, or gypsum; ammonia and sulphuric acid, and the result is, sulphate of ammonia; and so on. In the other, you may analyze and determine the elements of which a seed, a plant or a tree is composed, and their precise proportions, and put these elements together again, but by no known law of synthesis can they be made to unite and form a seed, a plant or a tree. Why? Because they are formed by the intervention of another law, the interference of a new agency, entirely unlike anything known to general chemistry. It is the play of *vital forces* which converts these chemical elements into their peculiar forms, and gives them their peculiar characteristics. Hence it is, that the roots of growing plants have a chemistry of their own, which puts at defiance, in some sort, the synthetical laws of general chemistry, which renders it impossible that such specific rules and directions should be given to direct agricultural operations, as a scientific matter, as we have in general chemistry. We cannot tell the farmer to put together such a proportion of potash, soda, lime, magnesia, oxide of iron, phosphoric acid, sulphuric acid, silica and chlorine, and the result will be wheat; and with such and such variations, barley; and such others, oats; and so on to the end of the chapter. There is and can be no such definiteness in the instructions of Organic Chemistry as this; no such mere mechanical manipulations, to secure specific results, as obtain in general chemistry. Why? Simply for the reason before assigned, that the results sought are not secured by mere chemical laws; but by the agency of that intangible, unknown something we call *life*, or *vital force*. It is this which determines the whole matter, not in contravention or defiance of the laws of chemical science, but in concurrence with them. It is an agency superadded to them. Hence, all we can expect of science is to *explain* the rationale of the phenomena we witness, and *suggest* new and varied means to secure the ends of agriculture, adapted to the varied localities where men live and the circumstances under which they find themselves. It can tell us the substances which must be found in our soil, and the proportions of these indispensable to their highest fertility, and the most successful cultivation of specific crops; the sources from which any deficiencies we may discover, may the most readily and economically be supplied; and suggest the mode or form of their application, which will render them the most effectual; all of which must be tested by experiment. All we can do is, to adapt our soils to these conditions as near as may be, and *wait* for the *vital forces* to work out, in their own way, the result.

Hence it will be seen, the great thing to be expected of science is, to reveal to us the facts and explain the causes of the phenomena we witness in our agricultural operations, so that we can abandon guesswork, and *know* just how to put our soils in the condition most favorable to the most luxuriant growth of whatever crop we wish to produce from it. This can be done only by the analysis of our several soils and the crops we cultivate, so that, by the comparison of the chemical composition of the soil, with that of the crop we intend to cultivate on it, we can see precisely what needs to be added, to adapt each to the other. And then we must have an analysis of different kinds of manures, prepared in the different ways that may be practiced, or may be suggested, so that we may know precisely what kind and how prepared, will the most effectually supply the wants of our several soils.

Our college laboratories, with slight additions and alterations, are prepared to do this work now—all that is needed now or will be needed hereafter. Thus, by applying our means in this place, we make available instrumentalities already provided for other purposes, without at all interfering with those purposes, making thereby a saving of expense to the State, securing all that can be attained by any method, so far as science is concerned, and at the same time doing a service to the institutions. It is helping the great interest of agriculture in the most effectual way, and at the same time doing a great service to the cause of science and letters through these institutions. Besides, it is providing not only for the present wants of agriculture, but making a permanent arrangement to meet all its future wants in this direction, and free as water to the practical farmer, and at a moderate expense to the State—at far less than it can be secured in any other way. Indeed, the only question is, whether it is not asked at too little expense on the part of the State.

2. It directly connects agricultural science and places it on a level with science and literature in general, instead of setting it one side as an isolated and inferior matter, not fit to be associated with the elegancies and refinements of general science and literature.

There is a strong tendency among young men to regard delving in the earth, working over the manure heap, and feeding animals—all farm operations—as a sort of menial and degrading employment, not suited to their notions of dignity and refinement. It is not suited to maintain the alabasterian color, or the feminine delicacy of their hands and faces, or the elegant taper of their fingers, so indispensable to *their* ideas of a gentleman. The sprouts of "Young America" have very delicate olfactories, and are greatly disposed to turn up their noses in pious horror, at the very thought of the fertilizing odors of the manure heap; and their stomachs are so nicely sensitive that the very *idea* of a well-filled and well-fed stall of animals, especially the rear of it, so nauseates them that the poor souls have to lie in bed until the "old man," or the hired man, has done the peculiar work there demanded. O *such* work is very unseemly, very, to gentlemen in embryo, and not to be endured by rose-watered, cologned and musked sprigs of science and literature, reposing in the arms and basking in the sunshine of the countenance of "*Alma Mater.*" And we are sorry to say that this sort of feeling is *cultivated* in our young men by too many *mothers*, as well as sisters and candidates for Hymen's altar. They, in too many instances, have a holy horror of garments scented with ammoniacal odors, and of hard and brawny hands, and will have none of this near their exquisite persons, of which folly they often have a plenty of time and good reason to repent.

Now it seems to us, that to separate the agencies of agricultural education from our higher seminaries of learning, and establish schools for this purpose alone, will have the effect to foster this feeling, and to make our young men look on agricultural science as a matter belonging to plebeians, but beneath the attention, and unworthy the notice of scientific and literary gentlemen; whereas, connecting it, as we propose, with our higher seminaries of learning, it puts it on a level with all other science, and with general literature in position, and makes it at once a part of a thorough course of college instruction. Planted here, a manure heap will not emit half as disagreeable odors as if in a stable or a farm-yard, if it does not soon come to have all the fragrance of the lily and the rose to their delicate olfactories.

Depend upon it, such a connection will have a most marvelous effect on the ideas of "Young America," as to the character of agricultural pursuits, and wonderfully change the testimony of their noses and eyes, as to the smell of odors, and the look of hands and faces. Under such circumstances the manure heap and the laboratory will become to the scientific and literary student, what the dissecting-room is to the student in medicine, and nothing inconsistent with the elegancies and refinements of general literature, but a necessary part of a thorough literary and scientific education, to be ignorant of which would be a shame and disgrace.

3. It lays the foundation and opens the way for the introduction of agricultural science into schools of a lower grade, as an elementary study.

One of the first effects of the connection of agricultural science with our higher seminaries of learning, will be the universal diffusion of agricultural knowledge among our educated men, by making it a part of a collegiate course of study. Thus, in the event of a demand for agricultural instruction in the higher class of our elementary schools, the teachers will be prepared to give instruction in the elements of this science, which is not now the case, nor will it ever be so, with teachers generally, unless such a connection is established. So that, by such a connection, we not only now secure all we can attain from science, provide for all we can expect in the future, rescue it from the repulsiveness and vulgarity of the manure heap, and put it on a level with science and literature in general, but we provide the means for as wide and general an introduction of the study of elementary agriculture into our schools, as circumstances may ever warrant. Thus, by such an arrangement, provision is made for all the present wants of agriculture in a scientific point of view, and equally for all its wants in this respect, that may arise in the future.

Beside, in this arrangement, the opportunity is afforded to all who may enter for study under the Professorship of Chemistry only in these institutions, to acquire general information through the agency of the lectures on various subjects, the library, and their school associations. They will there have not only a better opportunity for reading than elsewhere, but to learn how to use a library,—that the best and most efficient use of books is not to read them through in course, from end to end,—a thing few farmers know, but of the greatest importance to a man who wishes to acquire available knowledge. One of the greatest defects of our elementary schools is their failure to learn scholars how to use books. By this arrangement this defect in elementary instruction will be remedied in all those who may resort to these institutions.

But it may be said, in all this, no provision is made for the trial of experiments in the application of science to practical farm operations. This is true. And your committee would beg leave to say, that they do not deem it desirable that such experiments should be had in connection with any public school arrangement, some reasons for which have been suggested in the former part of this report, to which we refer. It seems to us, that the true line of policy is, to refer experiments on the suggestions of science to the farmers themselves, and that the various agricultural and horticultural societies of the State are the best agencies to foster and encourage such experiments, and the Board of Agriculture, as proposed to be organized, the best medium for the collection and diffusion of a knowledge of the results attained. Your committee are confirmed in this opinion by the course they understand to be pursued in England with reference to this very matter. Prof. Johnston devotes his time to original investigations in organic chemistry. When he makes any discovery which suggests any new substance or composition as a fertilizer, or new method of treating soils, manures or plants, he communicates the suggestion to the society or societies for whom he labors, and such as choose, test the suggestions by experiments under his instruction and direction, and in due time the result is reported through the society's transactions. This has been carried on for a number of years, and probably to no source is agricultural science so largely indebted for its progress, or practical agriculture for its improvement, wherever the English language is spoken, as to this. And still it works, and its course is onward. At this moment, probably, more original agricultural experiments are in progress under this regime than in all the rest of the world.

In conclusion, your committee wish to say, should the Legislature, in their wisdom, see fit to adopt the three bills proposed by this Board, of which the one accompanying this report is the last, and make them laws, it seems to us the foundation will be laid broad and deep, both for permanent advancement in agricultural science and progressive improvement in agricultural practices. Experience only can point out what other means may become necessary to secure the universal diffusion of the knowledge that may be accumulated among the farmers of the State. And surely the Legislature cannot refuse to grant what we ask on account of our extravagant pecuniary demands. If everything is granted, in the form reported by us, it will involve an additional annual outlay of not over six thousand dollars, and this for the greatest of interests in the State—Agriculture! And then the whole amount annually expended in all ways, to foster this interest, will not exceed twelve or fourteen thousand dollars. Can the Legislature hesitate one moment in granting recommendations requiring so insignificant a sum of money for benefiting and helping forward an interest that pays more than nine-tenths of the taxes of the State? It is impossible, especially when so large a share of them are themselves farmers.

All of which is respectfully submitted.

DARIUS FORBES, *Chairman.*

IN BOARD OF AGRICULTURE.

An Act to endow the Chemical Professorships of Bowdoin and Waterville Colleges, on certain conditions.

Be it enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECTION 1. The State Treasurer is hereby authorized and directed to transfer the sum of thirty thousand dollars, in six per cent. State stock, to the Board of Trustees of Bowdoin College, and the like sum of thirty thousand dollars, in six per cent. State stock, to the Board of Trustees of Waterville College, to be held in trust by them respectively, as endowments of the chemical professorships in these Colleges, of which they are trustees, whenever said Board of Trustees shall severally certify to the State Treasurer, through their Secretaries, under oath, that they have enlarged the duties and the means of instruction under said professorships, so as to embrace Agricultural Chemistry and Vegetable Physiology; and that they will comply with the requisitions hereinafter specified.

SECT. 2. It shall be the duty of said Boards of Trustees, to cause instruction to be given, without fee, to all persons, inhabitants of this State, not undergraduates, in a regular college course of instruction, who may resort to said institutions as students under the professorships of chemistry only; they having the same privileges of the several libraries and on the same terms, and being subject to the same college laws, rules and regulations, as other students, so far as they may be applicable to their position in said institutions; and such students may attend, without charge, all the lectures in said colleges, under such restrictions as may be imposed by said Boards of Trustees, and sanctioned by the Board of Agriculture.

SECT. 3. It shall be the duty of the professors of chemistry in each of these colleges, to analyze or cause to be analyzed, as speedily as may be, all soils, manures, plants and seeds, sent to said colleges for this purpose, by the farmers of this State or the Board of Agriculture, without charge to the applicant, and report the result to him, with such suggestions as he may deem necessary in the premises; and annually, on or before the first Wednesday in January, report to the Secretary of the Board of Agriculture a full statement of his doings, with such other matters as he may deem suitable.

SECT. 4. A committee of three from the Board of Agriculture, elected at its annual meeting, shall constitute an examining committee, to visit from time to time, the chemical departments of said colleges, to witness their instructions and doings, with special reference to the interests of agricultural science, and annually, on or before the first Wednesday in January, report to the Secretary of the Board of Agriculture, a statement, so far as they are able, of the doings, conditions and prospects of these departments.

DIGEST OF RETURNS

FROM THE

AGRICULTURAL SOCIETIES

IN THE

STATE OF MAINE,

FOR

1856.

PREPARED BY

S. L. GOODALE,

SECRETARY OF THE BOARD OF AGRICULTURE.

Augusta:
FULLER & FULLER, PRINTERS TO THE STATE.
1857.

PREFACE.

It is among the legitimate objects of Agricultural Societies not only to encourage the production and exhibition at their Shows and Fairs of the best animals, implements and articles, and thus to impart instruction and excite emulation among those who witness them, but also to collect and diffuse valuable information on subjects connected with husbandry among all who either may or may not be able to be present at the annual exhibitions. This latter object can, in a good degree, be accomplished by the adjudging committees incorporating into their reports the results of reflection, observation and experience, upon the several subjects with which they are supposed to be familiar; and it is greatly to be regretted that so many of the committees seem to think their task completed by the simple announcement of their awards. To arrive at satisfactory decisions, is as much as can be reasonably expected of any during the hurry and bustle of a Fair day, but a little thought and painstaking *previously,* might result in making the reports not merely a simple list of awards, but documents of value, and worthy general distribution among the farmers of the State.

While it is highly proper that Agricultural Societies should each publish its own transactions, and thus circulate among all interested therein, the awards of premiums, gratuities, &c., which may be made, it can hardly be expected that the *State* should publish *for general distribution* the decisions of committees as to the merits of Mrs. A. in Aroostook, of Mrs. B. in Kennebec, and of Mrs. C. in York, in the matter of bread, butter and cheese making, or of the farm stock and crops of their husbands; but if, in the reports of the committees, or in the statements of competitors, there be found that which is of interest and value to the agricultural community at large, there is evident propriety in its collection, digestion and diffusion broadcast, throughout the State.

In preparing the following pages it has been my aim to arrange whatever might be culled from the mass of returns made, of general interest; and it is most earnestly to be hoped that great improvement may hereafter be made by the preparation of *such reports and statements* as may render a digest of the same less unsatisfactory than this one necessarily must be, from the extremely meagre nature of the returns which were received.

MAINE STATE AGRICULTURAL SOCIETY.

This Society held its Second Annual Show and Fair at Portland, on the 21st, 22d, 23d and 24th of October, 1856. Great interest was taken by the citizens of that city, and much money, time and labor expended so to arrange and provide for the exhibition in all its appointments, as to render it both instructive and interesting, and it is pleasant to add, that the efforts were crowned with eminent success. The amounts awarded for premiums were as follows:

On Horses, Mares and Colts,	$1,157 00
Durhams and Grade Durhams,	114 00
Herefords and Grade Herefords,	10 00
Devons and Grade Devons,	53 00
Jerseys and Grade Jerseys,	37 00
Milch Cows and Natives,	24 00
Oxen, Steers and Beeves,	119 00
Sheep,	18 00
Swine,	30 00
Poultry,	13 00
Farm Stock,	35 00
Foot Races,	76 00
Grain and Grain Crops,	97 50
Fruits and Horticultural Products,	64 50
Plowing, Spading and Drawing Match,	73 00
Dairy Products, cash,	30 00
Dairy Products, three dozen Silver Spoons and one Butter Knife.	
Bread, Sugar and Honey,	37 00
Manufactures and Machinery,	276 75
Total in cash,	$2,264 75
Books, Silver Plate and Diplomas?	

REPORTS OF COMMITTEES.

On Plowing.

The Committee on Plowing, having attended to the duties assigned them by the Trustees of the Maine State Agricultural Society, beg leave to present the following report:

The farmer has every inducement to perform this part of his work in the best manner possible. If he have little manure, he must thoroughly pulverize his soil, so that it may be readily taken up by the young and tender fibres, and easily appropriated by them to its sustenance and growth. If he have a great quantity to be applied to his land, he sees at once that much care is required to cover and intermingle it with the soil, so that he may receive benefit for the present crop and retain its influence in after years.

Several particulars should be kept in mind, among which are the following:

The condition of the soil,—the quantity of manure to be applied,—the natural composition of the soil,—the nature of the subsoil, and the peculiar habits of the seed to be sown.

If the soil is filled with roots and seeds of weeds and bushes,—if it has been treated as many farmers treat their land, "cut and cover," more depends upon a thorough disintegration of the soil, than an abundance of manure. The roots are detached from their possession, the seeds are disturbed, and many may be destroyed; and when they have sent forth their roots and stalks, and asserted their privilege of enjoying life at all hazard, the hoe is easily laid at the root, because the soil is mellow and light. The condition of the soil should be considered as having a direct relation to the depth of plowing. The sterile, sun-burnt pine barrens, whose soil reminds one of the outer layer of fat on hogs fatted on skimmed milk and raw pumpkins, "a'most as thick as the rind," require shallow plowing, unless something is added to fertilize the coarse and friable subsoil. A rich, alluvial or vegetable soil, may be cultivated below its depth, because it contains properties sufficiently powerful to neutralize its sterility.

The quantity and local application of manure has much to do with the method of plowing. If the land is to be manured broadcast, and in great abundance, plowing can hardly be too deep; but if in small quantities, and that in the hill, the depth should be less, especially if the soil is in a poor condition, and in such cases a *gradual* deepening may be practiced profitably.

The third particular is almost entirely neglected. The rich, alluvial soil of our rivers, or the inexhaustible prairies of the West, may yield their fruit in abundance without much labor; but the hard, rock-bound soil of Oxford county, and similar localities, requires more tilling than most of our farmers have patience to bestow.

The nature and composition should regulate the depth and perhaps the *time* of plowing. A coarse, gravelly subsoil, operates like a sieve, unable to hold the fertilizing properties; they pass away as easily as a person upon a bed of quick-sand; consequently at the time of plowing something must be added to hold the manure while the roots take in what it wants. A hard, clayey under soil, is impervious to rain, manure, or finally to anything, and must be thrown up in small quantities, that it may undergo change, become intermingled with aliment, and able to impart sustenance to vegetation. Different crops require different kinds of soil,—different kinds of manure require to be sown at different periods of the season, and different modes of treatment at each stage of its existence; so it follows they require the soil to be prepared in a different manner.

An enumeration of the different processes would extend this report to an improper length. Spring and fall plowing each has its advocates and each probably its advantages; but all fall plowing would be injudicious and all spring plowing impracticable with many. But to return to the more immediate duties assigned your committee by the Maine State Agricultural Society. It is the conviction of your committee that a less degree of interest was manifested at this exhibition in the most important part of the performance, namely, that of plowing, than in horse trotting and foot racing. This ought not so to be. If plowing were neglected or left undone, horses would not be able to trot so fast. An inversion seems to exist. The producer is allowed a meagre pittance for exhibiting his strength, skill and usefulness, while the horseman receives the full value of his horse in many instances, for an exhibition of his speed. Your committee would recommend to the trustees to offer a premium of $200 for the best plowing, and $10 for the fastest horse.

Your committee are of the opinion that A. C. Maxfield is entitled to the first premium. To say that Mr. Maxfield is a good teamster and owns a good team, would be faint praise, for your committee are unanimous in the opinion, that it never was their privilege to witness the exhibition of training and discipline, which was displayed by those noble animals. Your committee express the wish, that all teamsters would use the same gentle *treatment* in the management of the horse. He used Mason & Nourse's large plow, and performed his work in thirty-five minutes.

The first premium to double team of W. S. Grant, Hersey's plow, South Paris, in sixty-five minutes.

Your committee find that some things can be done as well as others, and that plows can be made in the backwoods of Maine, and any in want of a plow that will do the work "finally and well," need look no further for them than at South Paris, Oxford county, Maine.

The second premium to H. C. Burleigh, with Webber & Haviland's plow, Waterville, and very little inferior to Hersey's.

The third to Frederick Marston, with Prouty & Mears' double Michigan plow.

The first premium on single team to Samuel Milliken, with the Berwick plow.

The second premium to J. G. Field, with the J. E. Robinson plow.

The third premium to A. Leighton, with Nourse & Mason's plow.

The fourth premium to F. Proctor, with the Berwick plow.

The fifth premium to Thomas Newman, plow unknown. The lots contained one-eighth of an acre, and the time occupied, varied from thirty to sixty-seven minutes. There was some difference in the lots and due allowance was made.

Respectfully submitted.

THOMAS MABRY, *Chairman.*

FROM THE REPORT ON DRAWING.

The advantages of good training and thorough discipline of a team of horses and oxen, are apparent to every one; so much so, that an enumeration of them is hardly necessary. It is equally evident, that he succeeds best who uses the mildest measures, and treats his animals with kindness, both in the yoke and stable. An ox will expend strength enough for all purposes, if rightly treated, without the severe application of the whip; but when tasked beyond what reason dictates, he is discouraged, and refuses to perform even a *reasonable* task. Any one believing differently, must be convinced upon witnessing the manner of those who made an exhibition of their own skill and the strength and ingenuity of their cattle. All was done without noise, or harsh application of the goad; and it gives your committee much pleasure to say, that the kind *treatment* of the teamsters would *alone* deserve reward, and in fact it was the means by which the teams were induced to perform their allotted tasks. It may not have escaped the notice of a *casual observer* that a noisy, nervous, quick-tempered man, never yet could draw great loads with his team, or depend upon them in "straight places."

Twelve pairs of oxen were entered for drawing, as follows: Moses Adams, two pairs; Frederick Marston, one pair; Thomas Newman, one pair; John Proctor, one pair; all of Portland.

Wm. S. Grant of Farmingdale, two pairs.

J. G. Field of Lewiston, one pair.

H. C. Burleigh of Waterville, one pair.

G. G. Shores of Waterville, one pair.

Samuel Warren of Scarboro', two pairs.

Also, four horse-teams, one by A. C. Maxfield of Casco, of four horses.

One by George Bailey of Westbrook, three horses.

One by George Bradley of Portland, three horses.

One by John B. Brown of Portland, three horses.

Also, one very fat cart horse by J. B. Brown.

As no premiums were offered for draft horses, your committee could not award any, but regret that they were unable to do so, inasmuch as they performed the labor with ease and ingenuity. The teams were all well disciplined, and showed that the owners are merciful. The team entered by J. B. Brown attracted much notice for its fine condition and good training. It was indeed a noble specimen of what Maine can do in raising horses; and when it is remembered that the owner's motto is "Excelsior," it is not at all a matter of surprise that it was universally considered the best on exhibition. That a horse may labor all the time and still be fat, was clearly demonstrated in the case of the cart horse of J. B. Brown. His feed no doubt was like that of the Irishman's, "oat straw, and *that* not more than half thrashed." Much more might be said of the teams, but space will not allow it at this time.

THOS. MABRY, *Chairman.*

ON HORSES.

The Committee to whom was referred Division 1, Class 1, from Sections 1 to 8 inclusive, beg leave to report as follows:

We regret there were not more of the stock horses of Maine on the ground for our examination, knowing as we do, that there are many more in the State than we found, eminently worthy of our notice and public patronage. And we cannot forbear to suggest, that looking at the premium list and noting how entirely out of proportion with those offered on other things and far below what we deem they should be, we can attach no blame to owners for not being at the expense and trouble of presenting their stock horses from distant parts of the State, and we trust our board of trustees will see to it, that this, as we deem, defect in the prize list, is remedied, in that for the next exhibition.

D. FORBES, *for the Committee.*

FROM THE REPORT ON APPLES.

On presenting this report, your committee beg leave to state that in estimating the comparative worth of different specimens of fruit exhibited on occasions like this, *beauty* and *flavor* ought not *alone* to receive attention. But that *habitual productiveness, adaptation to climate*, and every thing else affecting the value of the respective varieties for general cultivation should have due weight in forming a judgment as to their proper rank. An apple of well established reputation, other things being equal, should be preferred to one not so thoroughly tested. A variety that has generally proved unproductive or unprofitable in this region, however high its reputation elsewhere, should not receive high commendation on a solitary production of a good specimen, unless accompanied by a description of an unusual mode of cultivation which might account for its unusual success. With these views and with due consideration of the difficulty of making a good display in a season when, like the present, the apple crop in this State, as well as in other parts of our land, has proved almost an entire failure, we proceeded to the examination of the parcels before us.

We award to F. A. Butman of Dixmont, for the best twelve varieties of twelve specimens each, among which are Roxbury Russet, Ribstone Pippin, Porter, Baldwin, Blue Pearmain, Bell Flower, Honey Pink, Worcester Sweet Russet, and Beauty of Kent, which are considered worthy of cultivation, the first premium.

To Charles O. Kilborn of Bridgton, who is the only other exhibitor of twelve varieties, the third premium.

To Thomas Hannaford of Cape Elizabeth, for the best dish of apples, variety, "Mother."

To D. A. Fairbanks of Augusta, for second best dish, variety, "Fairbanks."

To N. Hinkley of Monmouth, for best bushel autumn apples, variety, "Hubbardston Nonsuch."

To E. R. Hamilton, for second best variety, "Nodhead."

The first, second, and third premiums on winter apples, were awarded on "Baldwins."

Many other good specimens were exhibited, but we have not time nor opportunity to comment upon them. From causes before mentioned, we had no reason to expect so good an exhibition of apples as we have found.

M. Gould, *Chairman.*

FROM THE REPORT ON PEARS, PLUMS, GRAPES, &C.

The Committee, in attending to the work assigned them, find on your tables:

Pears—Presented by S. L. Goodale of Saco; dishes of Louise Bonne de Jersey, Belle de Noel, Duchess d'Angouleme, Beurre Clairgeau, and a dish containing more than twenty varieties, mostly new.

By Thomas Kane of Portland, grown on quince stock; dishes of Beurre d'Aremburg, Vicar of Winkfield, Louise Bonne de Jersey, (wrongly labeled *Belle Lucrative*,) Easter Beurre, and Flemish Beauty; a fine collection.

By Warren Sparrow of Westbrook, 11 varieties; among them a fine dish of Belle Epine Dumas; two specimens of Flemish Beauty, the best on exhibition; fine specimens of White Doyenne, Baron de Mello, and Jalouise de Fontenay.

By Charles Richardson of Portland, one peck of Beurre Diel.

By John Rogers of Kittery, one peck of Duchess d'Angouleme, dish of Vicar of Winkfield.

By Joseph Russell of Portland, a case of pears; a half dozen varieties, including very fine specimens of Fulton.

By William Moulton of Portland, one peck of Vicar of Winkfield, dishes of Beurre Diel, and Louise Bonne de Jersey.

By F. A. Butman of Dixmont, dishes of Dix and Winter Nelis.

By Warren Brown of Westbrook, dishes of Vicar of Winkfield, and two others.

By Mrs. Wolcott of Augusta, one dish of pears.

By J. W. Adams of Westbrook, eight varieties of pears.

Grapes, Foreign Varieties—By George Jewett of Portland, Syrian Grape, grown under glass; large, but not mature.

By J. G. Huston of Damariscotta, Black Hamburg, and two other varieties, very fine.

By S. L. Goodale of Saco, Black Hamburg, well matured.

By Thomas Kane, Black Hamburg, in open air; nearly ripe; much better than Sweetwater or any other foreign variety grown out doors; its culture can be successful only under glass.

Native Grapes—By H. Sweetser, a case of Sweetwater, (foreign?) and Isabella, unripe.

Mrs. R. K. Goodenow, Paris, C. A. Leach, New Gloucester, and Byron Greenough, Portland, each presented specimens of Sweetwater Grapes; good as may be expected in open air; unripe.

Specimens of one or more varieties were examined, from Luther Wiswell, Windham, Mrs. Shaw, Gardiner, John Reed, Westbrook, F. R. Jordan, Cape Elizabeth, P. P. Reed, Portland J. Bradford, Portland, G. S. Barstow, Portland, J. W. Adams, Westbrook, J. L. Milliken, Scarboro', F. Wingate, Augusta, and George Jewett, Portland.

Miss S. N. Gardiner of Portland, exhibited specimen grapes, with regard to the name of which, the committee were not sure. It is similar to Isabella as grown in New York, but larger and finer than usually grown here. Probably owing to the vine being vigorous and bearing lightly, and being well thinned out. She also exhibited Isabella of the more usual appearance.

Cultivated Cranberries—A basket of this fruit was on exhibition, by J. T. Davis of Biddeford, accompanied by statement on method of culture.

John Mead of South Bridgton, also presented a sample, accompanied by statement.

Parcels by George F. Shepley of Portland, and Hiram Wight of Naples, without statements. Some of these samples were the finest we have ever seen.

Peaches—Were shown by G. W. Allen, Cape Elizabeth, and S. M. Bradbury, Limington.

Orange Quince—A fine basket by Doctor E. Clark of Portland.

Jams and Jellies—Were presented by W. D. Dana of Perry, as prepared for market; one jar showed six varieties of jelly entirely distinct as if separated by glass, namely:—Currant, Gooseberry, Blackberry, Apple, Rasberry, and Red Siberian Crab Apple, showing great care and skill in the preparation; a description of which accompanies the parcel.

American Grape Wine—Exhibited by E. Paige & Co., Boston, in cases, and examined by the Fruit Committees consolidated. No witnesses were admitted to the interesting exercises. To your Committee on Apples is conceded the right to report the case. But should that able committee alone, fail to compass the subject in its dimensions, your committee, each by a careful examination of a bottle at home, with an eye single to the case in hand, hope unitedly to be able to furnish such a report hereafter as shall cover themselves and the State all over with glory.

The fruits assigned to your committee take rank only below the apple in value and importance in domestic economy in our State. Our sense of the importance of fruit culture is continually strengthened, in whatever light the subject is regarded. In its social, political and moral bearings,—in its connection with the general comfort and subsistence of mankind,—and with the progress of civilization, no secular subject demands more of our attention.

Of the Pear, we have proof that several varieties now before the public are adapted to general cultivation throughout the interior of the State. Our people are learning to proceed with caution in planting new varieties in this climate. The list adopted by the American Pomological Society as adapted to general cultivation, is to be received by us with large abatement. We own up as being out of the pale of the good society circle, in the particular thing of growing this fruit; but not so hopelessly in the Arctic regions, as our friends who leave us to go West, would make the world believe. At no one point in our whole country are pears produced in greater variety and excellence, than the immediate vicinity of Boston. We can hardly hope to see at any place in our State, so much care devoted to their culture, as is seen there. They are not so far removed but we may and do avail ourselves of their experience; look to the veterans in pomology there, for the most hardy, desirable varieties, as are being proved; and through the hands of our trusty nurserymen we are receiving annual additions to our list of such as withstand the cold, and produce their fruit in its season, by the side of our most hardy varieties of apples.

Of the Plum, our State is the field where it develops in its varieties the highest excellence. But the *pleasures* that should accompany the labors of a fruit committee, and sweeten the remembrance—*the pleasure of tasting*—was in this instance unfortunately denied us, as the lateness of the season cheated our longing eyes and waiting palates of the last fleeting specimen. To the *time* alone, is our misfortune in this respect to be attributed.

Our neighbors in other States, whose genial sun enables them to luxuriate in the peach and other delicious and health-giving fruits in greater variety, yield to us the palm of producing the best plums. The several Horticultural Societies of the State, particularly that of Bangor, have contributed very much of late, to the dissemination of the better sorts throughout our interior. As our farmers and gardeners are being introduced to the excellent varieties of this fruit, and are learning the ease and cheapness with which their homes may be beautified, enriched and ennobled by their culture, your committee are gratified with the manifest improvement in this respect, and feel that the past unpardonable neglect of choice fruits in their season, so often met with on the best farms of the State, is giving place to a wise appreciation of the rich gifts of a beneficent Providence. The Curculio, that universal pest, yields place more readily to the diligent culturist here, than in other States.

Grapes. While the mass of American culturists are having their attention directed to an increased production of this fruit, and our broad country is being searched for every new type of the American species that promises well for all or special localities, we are happily not excluded from participating in this subject of national and vital importance, nor barred by nature's laws from ultimately sitting—every culturist—under his own generous vine. Several new varieties are now under trial in the State, and promise well for pretty general cultivation in open air. A very few seasons more will fully establish what is at present hardly a problem. We here deem it a duty to caution our people against a lavish expenditure for new and untried varieties, with euphoneous names, backed by fair words of interested parties; for we feel assured there may be sold, vines not one remove above the wild fox grape of New England, under names that sound as well as *Charter Oak Grape,* or *Northern Muscadine.*

Of the new varieties we feel safe in recommending the *Hartford Prolific,* as very early, and better than the Isabella ever gets in Maine, except under peculiarly favorable circumstances. *Rebecca* promises to be most excellent—as good as the foreign varieties grown under glass. *Diana* is very fine, and *Concord* good. Maine is destined yet to grow vineyards on her hill sides.

Your committee feel constrained to offer in this connection, encouragement for a more general production of grapes under glass. To elicit facts bearing on this subject, we submitted to applicants for premiums the following questions:

1st. What is the size and cost of your grapery?—and of what materials are the walls?

2d. Do you introduce artificial heat at the opening or close of the season?

3d. How many crops have you produced in your grape house?

4th. What quantity do you consider a fair crop for a house the size of yours, when the vines are of good age?

5th. What are the varieties you produce, and what the market value of them?

Any other information on the culture will be thankfully received.

Mr. J. G. Huston of Damariscotta, responded as follows:

"1st. My grapery is 30 by 15 feet; back wall of wood, about 12 feet high; all the rest glass; cost about $200.

2d. I use no artificial heat.

3d. This is the first season I have allowed the vines to bear to any amount.

4th. About 25 pounds to the vine, which would make 500 pounds; this would be the full extent for vines at five years old.

5th. My vines are mostly of the Black Hamburg, which I consider the best for a cold house; I have Wilmot's New Black Hamburg, Grizzly Frontignac, White Sweetwater, and Cape; worth from 50 to 75 cents per pound.

I consider the formation of the bed to be of the greatest consequence; the construction of the house next, and lastly, proper care in ventilating the house, so that the temperature may not go too high or too low. I have watered mine inside wholly with soap suds, about six quarts to each vine, three times a week, using a garden engine."

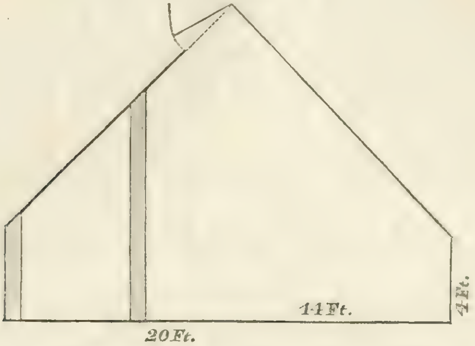
S. L. Goodale of Saco, says:

"My grapery is 50 by 14 feet, of wood; cost of building about

$250; cost of the *border* $100 to $125. My border is only 14 feet wide outside the house; it should be 20 feet; in which case the vines could be more heavily laden without injury. No artificial heat is used; some years ago I had a furnace in it, but soon discontinued its use, as the grapes will ripen as well without it, and the earlier matured will not here command a price corresponding to the additional cost and trouble. Have cropped the vines eight years; and consider 12 to 15 pounds per vine a fair crop; with more ample range for the roots something more might be taken; but the liability to overload the vine is great, and if done, the injury is serious and lasting. I take off three-fourths of the bunches as soon as formed, and thin out the berries on the remainder, one-half to two-thirds, when as large as peas. The varieties are Black Hamburg, say three-fourths; most of the others are Chasselas; I had a dozen other sorts, but they don't amount to much except for variety, and have been mostly replaced with the above. Usual price in September and October, 75 cents per pound.

The first requisite to successful grape culture is a good border; say 20 to 25 feet wide, and four feet deep, well drained. For materials, pasture turf, stable manure, and bones, are the best. (Add one or two old horses, and any quantity of dogs, that may well be spared from any neighborhood.—*Committee.*) The next is a proper thinning out of the fruit, both of bunches and berries. Let these be attended to, (with the necessary pruning,) and an intelligent boy of ten or twelve years can easily attend to all else."

From the data above, it is fair to conclude that the entire cost of a permanent erection, may be cancelled by the market value of one crop of grapes. We have repeatedly been assured by horticulturists that this accords with their experience. We have often met with structures that answered well the purpose, costing considerably less than either named above. In this land of abundant and cheap building materials, with the Yankee ingenuity of the people, (of whom it is said in California, that every second man knows how to build a saw mill,) almost any farmer or gardener and his sons may erect a grape house at a trifling outlay, that will prove a valuable appendage to any home. Let us see for a moment, if we cannot embrace other objects and purposes in the design.



Our artist will make clearer our ideas by showing a vertical section of a house, say twenty feet wide, and extended to any desirable length. The interior wall may be of boards nailed on both sides of cedar posts, and the middle well filled with dry spent tan bark. A portion of the back roof may be constructed to raise in sections, for the purpose of ventilation, thus allowing the sashes to be made whole and secured permanently. The back room to be used for a poultry house in summer, and when the grapery shall be dressed in its snug winter attire, by a door in the partition wall, admit the "biddies" to the liberty of the whole house and its pleasant sunshine. To the middle wall may be trained the peach or apricot and other half hardy trees that are not to be trusted in open culture. This room is the place to start early vegetables for transplanting to open grounds; and room may be given through the season for quite a quantity of sweet potatoes. Had we time and tact, it would be a pleasure to us to go more into detail with our ideal structure. But our mission is rather of the suggestive.

C. Chamberlain, *Chairman.*

ON JAPANESE AND CHINESE ARTICLES.

The Committee appointed to examine the extensive collection of curiosities exhibited in the Fair, from Japan and China, take pleasure in reporting:

That no articles contributed to the fair added more to its interest, than did these wonderful specimens of the ingenuity and practice of the people of these far off regions. The fact that so little is known of them, by our people, makes every thing from that quarter an object of special interest.

Your committee consider that the thanks of the managers of the fair are particularly merited by Lieut. George H. Preble, of this city, by whose attention and kindness the collection was furnished and arranged in the halls. The various and numerous articles under this head, had been collected with much patience and assiduity, by Lieut. Preble, in the course of his voyages to different ports of those countries. By this zeal in collecting the marks of the skill and ingenuity of these nations, he has really obtained a most respectable nucleus or foundation for a Chinese Museum, with Japan as an addendum. And it may be, that from this nest egg may grow up a museum of curiosities of far off lands, as permanently interesting as some that now exist, and ever attract strangers to their halls, in some other cities of our country.

It would be almost an endless undertaking to name separately, and comment upon, each of the multiplicity of articles displayed. They were of nearly all forms and textures, and requiring more than a casual glance to perceive all the beauties of their material and construction. It is not the design of this report, neither is it deemed necessary, to go into particulars to that extent. We have obtained a catalogue of most of the curiosities displayed, which is appended to this report. Your committee would not close this brief notice of this attractive portion of the fair, and of the acknowledgments due the generous contributor, Lieut. Preble, without expressing the hope, that this valuable collection of curiosities may in some way, find its proper location in some suitable place, where, while it will be carefully preserved and added to, it may also be a gratification to all lovers of the wonderful and curious in nature and art. The committee with pleasure, award a diploma, to Lieutenant Preble.

CHARLES HOLDEN, *Per Order.*

Portland, December 1, 1856.

Memorandum of articles contributed to the Maine State Agricultural Show and Fair, 1856.

JAPANESE ARTICLES.

Specimens of Porcelain ware.
" " Lacquered ware.
Ladies' shoes or sandals.
Gentlemen's shoes or sandals.
Children's shoes or sandals.
Stockings or tarbees.
Specimens of coins, copper and silver.
Books, very fully illustrated.
Paper of tobacco.
Pipes and pipe cases.
Curious box, with a drawer the full size of the box, yet opening four different ways.
Sakee bottles.
Caricature of Commodore Perry and two of his officers.
Paper pocket handkerchiefs.
Earthern ware.
Specimens of silk.
Fans.
Embossed box.
Cargame or metal mirror with embossed back.
Straw boxes.
Chow Chow boxes, green and crimsoned lacquer.
Japanese letter paper, showing the manner of folding.
Green and crimson lacquered trays.

OIL PAINTINGS BY CHINESE ARTISTS.

1.	Landscape; white cloud hills and water-fall,	Yucqua.
2.	Bridge and water-fall,	"

3.	Sharming, a suburb of Canton, house and ladies with a flower boat and pleasure party,	Chaickong.
4.	Sharming, a suburb of Canton, with Tanka boat and girl—Chinaman smoking,	"
5.	Dead game; copy from French engraving,	Loequa.
6.	Dead game; copy from French engraving,	"
7.	Playing chess—The game,	"
8.	Playing chess—The forfeit,	"
9.	Playing checkers—grandpapa bothered,	"
10.	The Quan chow foo, or Prefect of Canton, a portrait,	Lamqua.
11.	Landscape; sunshine,	Yuequa.
12.	Landscape; enclosed hill and river, a Chinese pic-nic,	Sunqua.
13.	Interior; a Chinese gentleman, number one wife and two concubines,	"
14.	An American clipper ship, "The Banner,"	Charchow.
15.	A typhoon on the Canton river,	Yunqua.
16.	The dawn of love, copy of an English engraving,	Yeuqua.
17.	The foreign residences, Canton, with the U. S. chartered steamer "Queen," a water color drawing,	Sunqua.

Sand Picture. Osborne House, the private residence of H. B. M. Victoria, made entirely of natural colored sands from Alum Bay, Isle of Wright.

Two books of outline drawings containing two hundred and fifty designs by Chinese artists of gods and goddesses, gamblers, trades and professions, illustrations of the culture of tea and rice, and the manufacture of silk, punishments in the infernal regions, &c., &c.

Two books of rice paper paintings.

Thirty silk pictures of Chinese costumes and trades; the dresses being formed of silk and cotton glued to the paper.

Chinese maps and drawings.

Illustrated Chinese character for happiness. A specimen of the pictures which usually ornament the walls of a Chinese dwelling.

Nest of the esculent Swallow, much used by the Chinese as an article of food.

Seventy-two bird skins from Mallaca.

The nutmeg, black pepper and clove fruit flower, and leaf preserved in alcohol from Singapore.

A Turkish lady's shoes and slippers.

A Greek lady's cap.

Girdles manufactured from the fibre of the cocoa nut by South Sea Islanders.

China vases, large and small.

Tea pots of earthern ware, very curious.

A water pipe.

Chinese caricatures of English soldiers.

" coins.

" compass.

" " and sun-dial.

Brass plate mosaiced with porcelain.

Chinese foot warmer.

Mahee spilum fan.

Three side fan, showing three sides by opening different ways.

Chop sticks.

Jade stone dragon.

Model of a Malay prow.

" " Chinese san pan.

Case containing Australian birds mounted.

Vegetable caterpillars from New Zealand.

Shell flowers from the Mediterranean.

Broken wine glass, specimen of Chinese mending.

Specimens of Chinese ware mended with rivets.

Clay figures of Chinese mandarins and ladies.

Baked figures of coarse pottery, representing beggars.

Bamboo idols, card cases, vases, paper cutters, boxes, &c.

Carved stone vase, from Foo chow foo.

" " card receiver, with carved wood stand.

Copy of medal presented to Commodore Perry and the officers of the Japan expedition by the merchants of Boston.

Buddhist pearl shells, having numerous images of Buddha on the inside. Lead images of that God are inserted while the animal is alive, by whom they are afterwards coated with the pearly substance of the shell.

Scallop shell from Jerusalem (such as is often worn by the pilgrims to the Holy Land,) engraved with the figures of our Saviour bearing the cross.

The Imperial Chinese dictionary in ten cases and sixty volumes.

The works of Confucius and Mencius in Chinese.

The poetical works of Tu fu who flourished A. D. 400; a beautiful specimen of Chinese block printing in four colors.

Chinese almanacs for 1853 and 1854.

New Testament in Chinese.

History of the United States in Chinese.

Reid's theory of storms in Chinese.

Official register of officers in Chinese, being the Chinese red book.

Copies of the Pekin Gazette.

Imperial proclamation marked with the vermillion pencil.

A Chinese bank bill, value $3, "Bank of Fragrant Flowers."

History of Chinese coins and medals, fully illustrated.

Buddhist prayer book, illustrated.

Wooden stereotype plate of a Chinese tract.

Fac simile of the death warrant of Charles I.

" " Magna Charta of King John.

Chinese maps and charts of the coast, Chusan Island, &c.

Four Chinese idols carved in wood, and richly gilt, taken from a Chinese pirate junk.

Six bronze idols.

One bronze vase.

Three small bronze vases.

One toy tea set, fine China, fifty-two pieces.

Model set of Chinese chamber furniture, inlaid with ivory, from Ningpo, consisting of bedstead, tables, chairs, &c.

One Chinese table with folding leaves, a model of those in common use in China.

One set models of agricultural instruments, viz: Irrigating machine, winnowing machine, rice hulling machine, horse rake, harrow, rakes, hoes, &c.

Chinese lantern.

Chinese opium pipe and opium smoker's pillow.
Double sword, taken from the pirates.
Bamboo shield, " " "
Signet stamps, " " "
Bamboo ornament carved.
Carved frames from Ningpo.
" lacquered box, red lacquer.
Small round table, Chinese ebony, elaborately carved.
Set of chessmen elegantly carved.
" backgammon men "
Backgammon board, lacquered ware.
A Turkish coffee cup and stand.
Pair of Chinese lacquered pillows.
" " bamboo covered pillows.
A pebble from the brook of Kedron.
A stone from Mars Hill, near Athens.
A piece of marble from the Acropolis, Athens.
" sandstone from Kenilworth Castle.
" granite from Cleopatra's needle.
Alexandria in Egypt.
Cement from the Parthenon, Athens.
A square of mosaic from Mount Zion.
Rosary from Bethlehem.
Chinese metal mirror.
Carved lotus stand, &c.

Scraps gathered from Statements.

ON HORSES.

Moses Call, Newcastle, exhibited stallion, sired by imported English horse, Royal Tiger—describes him as "a fine roadster, with great power of endurance, and perfectly kind."

John L. Custis, Gorham, exhibited stallion, sired by imported Arabian horse, Imaun, out of a Messenger mare—regards him superior for "docility and endurance."

L. P. Warren, Saccarappa, exhibited stallion, Arabian sire, Morgan dam—"its general characteristics, style, speed and endurance."

J. E. Trafton, exhibited Morgan stallion; prefers "for speed, gentleness and quick to learn."

Benjamin Young, Jr., of Hartford, exhibited Morgan stallion; commends him "for bottom and speed, kind, and a fast walker."

Nathan Foster, Gardiner, exhibited Messenger horse; says he "prefers the Messenger breed to all others for power of endurance, easy and rapid gait, and extraordinary longevity;" thinks that horses have not been so closely bred in this country that one breed can be said to be kind or docile, or the reverse. We find different dispositions in the different families of the same breed, and on the whole, it may be said of horses, as of other stock, that training has as much to do with disposition, as hereditary qualities.

Andrew D. Maxfield, exhibited Messenger colt; prefers this breed for "disposition."

Jere. N. Libbey, exhibited Messenger; prefers it for "disposition and size."

Robert Houston, Falmouth, exhibited one of Messenger and Defiance breed; commends it for "speed and endurance."

Jona. Moody, Lincolnville, exhibited stallion of Messenger and Morgan; commends it for "speed and bottom—considers the Messenger the most docile and best disposition."

Nelson Strout, Durham, exhibited Messenger and Morgan stallion; prefers this breed for "speed, endurance and mild disposition."

E. K. Snow, Bath, exhibited a Messenger and Morgan horse; prefers it as "hardiest, toughest and good for traveling."

John F. Anderson, South Windham, exhibited a mare named Sally Maria, with her colts. The mare from a Messenger dam, a fast walker, and is inclined to be vicious—believes the Messenger breed to be generally kind; this mare was much abused in early life.

Improved Short Horns or Durhams.

W. S. Grant, of Farmingdale, showed fine cattle, and his statements commend them as valuable for stock and milk, and the most kind, docile and quiet.

Jesse Wadsworth, of Livermore Falls, exhibited fine cattle, and the pedigrees of several, accompanying his statements, are here appended. He prefers this breed as adapted for milking and breeding, as docile, of early maturity, and good for work or beef.

Pedigree of Bay State, (227.) Roan; calved July 6, 1853; got by Murat, (729,) out of Victoria, by North American, (116,) Lady Holyoke by Hero, (4020,) Louisa by Boston, (1735,) imported Boston cow, by Sir Charles, (1440,) Duchess, by Wellington, (683,) by Admiral, (4,) by Sir Harry, (1444,) by Colonel, (1845,) by a grandson of Hubback, (319,) by Hubback.

Pedigree of Young Bay State. Calved at Livermore Falls, April 22, 1856; color, roan; got by Bay State, (227,) out of Stella, by North American, (116,) Stately, by North Star, (4592,) Princess, by Splendid, (5297.) Flora, by Patriot, (2412) Nonpariel, by Young Denton, (963,) Arabella, by North Star, (460,) Aurora, by Comet, (155,) by Henry, (301,) by Danby, (190.)

Pedigree of Young North American. Red and white; bred by Jesse Wadsworth, Livermore Falls, Maine; calved January 24, 1847; got by North American, (116,) out of Adeliza, by Agate, (2,) Adeline, by Young Comet, (3427,) Emma, by Wellington, (683,) Anabella, by Major, (398,) Ada, by Denton, (198,) Aurora, by Comet, (155,) by Danby, (190.)

Pedigree of Prize. Red and white, bred by Paoli Lathrop, South Hadley Falls, Mass.; calved May 31, 1839; got by Dictator (3591,) out of Princess, by Washington, (1566,) Pansy by Blaize, (76,) Primrose by Charles, (127,) by Blith Comet, (85,) by Prince, (521,) by Patriot, (486.)

Pedigree of cow, May Flower. Red and white, bred by Paoli Lathrop, South Hadley Falls, Mass.; calved May 1, 1847; got by North American (116,) out of Prize, by Dictator, (3591,) Princess by Washington, (See Prize above.)

Pedigree of Heifer Calf. Red and white, bred by J. and E. Wadsworth; calved Feb. 20, 1856; got by Logan, out of Prize, by Dictator, (3591,) Princess, by Washington, (1566,) (See above.)

Logan was got by Santa Anna (947,) out of Lady Holyoke, (See page 427 of Am. Herd Book.)

Pedigree of Cow, Stella. Roan, bred by Paoli Lathrop, South Hadley Falls, Mass.; calved in November, 1845; got by North American (116,) out of Stately, by North Star, (4592,) Princess by Splendid, (5297,) Flora by Patriot, (2412,) Nonpareil by Young Denton, (963,) Arabella by North Star, (460,) Aurora by Comet, (155,) by Henry, (301,) by Danby, (190.)

Pedigree of Heifer, White Lily. White, bred by J. and E. Wadsworth, Livermore Falls, Maine; calved April 9, 1854; got by Comet (358,) out of Lady Holyoke, by Hero, (4020,) Louisa by Boston, (1735,) Boston cow by Sir Charles, (1440,) Duchess by Wellington, (683,) by Admiral, (4,) by Sir Harry, (1444,) by Colonel, (1845,) by a grandson of Hubback, (319,) by Hubback.

Pedigree of Heifer, Alice 4th. Roan, bred by Wm. Cushman, New Braintree, Mass.; calved April 8, 1854; got by Marat (729,) out of Alice 3d, by Logan, (95) Alice 2d by Prince Albert, Alice by Splendid, (5297,) Danea by Carlos, (1787,) Dewdrop by Charles, (878,) imported Dulaibella by Frederick, (1060,) Delicia by Major, (2252,) by Comus, (161,) by Marske, (418,) by Mr. Wetherel's bull.

Grade Short Horns were exhibited by the following persons, among others:

Horatio Southgate, Scarborough, who prefers them to the natives as "more perfect in form, better development of muscles and quarters, rounder and longer in the barrel, shorter and more stocky in the legs and arms, and milder and more gentle in temper, especially the cows, fatten more easily, and on coarser food."

Samuel Warren, Scarborough, commends them as "of good form and quick maturity, good for milk or breeding."

William W. Patten, Topsham, prefers these "for size and beauty."

Obadiah Whittier, Vienna, prefers these—"1st, for color, always red; 2d, for dairy qualities in cows; 3d, for being extra feeders and quiet disposition in bulls; 4th, for large size and fine build—has never known a bull vicious or cross."

G. W. Chamberlain, Carmel—"For quiet disposition, readiness to take on fat and superior feeding. A cow gave milk eleven months out of twelve, and twelve if required; never less than eight to twelve quarts, and twenty-four during June and July."

Asa B. Parsons, East Parsonsfield, showed a cow weighing 1,716 pounds; girth 6 feet 11 inches; commends the breed for dairy, beef and stock.

Samuel Millikin, Saco, showed a Grade Durham and Devon; "regards this cross as best combining the qualities which constitute a valuable animal—the first for growth and disposition, the latter for color and activity. I give very little grain, as I consider it imprudent for farmers to feed grain to young stock while we are dependent upon other States for it, being ourselves more of a hay growing than grain growing community."

NORTH DEVONS.

John F. Anderson, South Windham, exhibited North Devon cattle, of which he says:—"I prefer them, as more hardy and hearty in feeding, earlier maturity, greater uniformity of color, size and shape, and better quality of milk than any, except the Aldernay or Jersey cows, and better suited to the soil and climate of Maine. Have never seen a vicious or tricky Devon. I believe them to be more docile and tractable than any other." Of a Devon cow, he says: "She has been kept on rough fodder and hay, with a few carrots and turnips in winter, grass in summer, no grain of any kind, is remarkably gentle, and promises to excel in quantity as well as quality of milk. Cannot give her average while in milk, but in June and July she gave more than two ten quart pails full each day, eighteen quarts milk measure." (Pedigrees of several as follows:)

Bull, Norfolk Third.

Devon; calved April, 1855; bred by N. J. Blakeslee, Watertown, Conn., now the property of John F. Anderson of South Windham, Maine. Won the first prize as a *full blood yearling bull,* at the second exhibition of the Maine State Agricultural Society, October, 1856. Sire, Norfolk, 2d; Gr. Sire, Norfolk, (266.) Dam, Fancy, by Prince Albert; Prince Albert by Champion, Champion by Bloomfield, (148;) Bloomfield by Patterson's bull, Eclipse (191;) Grand dam, Victoria, by a bull, the get of Bloomfield, (148;) Great grand dam, Beauty by Matchless, the get of Red Rover, (352.)

Heifer, Jenny Lind 2d.

Devon, calved March, 1855; bred by N. J. Blakeslee, Watertown, Connecticut, now the property of John F. Anderson, of South Windham, Maine; Sire, Prince Albert, Prince Albert by Champion, Champion by Bloomfield, (148;) dam Ellen, 2d, by Matchless 2d, out of Ellen, Matchless sired by Red Rover, (352.) Both the above animals will be registered in the third volume of Davy's Devon Herd Book.

Heifer, Cherry.

Grade Devon; calved 1853, bred by J. F. Anderson, South Windham; sire, 15-32 Devon, balance Native, (Col. E. Anderson's;) dam, Daisy, 12-16 Devon, balance Native, (J. F. Anderson's.)

Samuel Warren exhibited a Grade Devon which he commends as of good color and thrifty feeder; notices no particular difference in docility between these and Durhams.

Joseph Tufts of South Paris, showed North Devon cattle, of which he says: "I prefer them for their hardy character, their good feeding properties, and the richness of their milk. They make more butter and cheese to the same quantity of milk than any other cows I have ever seen. They combine breeding and milking properties in fair degree and are the most peaceable and docile of animals."

The Committee say that Isaiah Wentworth exhibited "a beautiful herd of full blood Devons." They did not arrive in time to obtain a premium, and no statements were received from him.

JERSEYS.

Dr. E. Holmes, Winthrop, exhibited Jersey cattle, of which he says: "I regard this breed as superior for giving rich milk and making butter of very yellow color and good consistency. I find this breed docile and quiet, but no more or less so than others." Of the bull "Jersey Boy," he says:—"I kept him on common hay, with turnips (in winter.) During cow time, he had in addition to hay, half peck of oats per day. He served seventy cows this last season and since then kept on ordinary pasture."

W. S. Grant, Farmingdale, showed Jersey cattle also, and says he prefers them as superior for the dairy—thinks the Durhams more docile, kind and quiet than other breeds.

NATIVES.

John T. Winslow, Westbrook, showed a Native cow, seven years old; "will average twelve quarts per day, and give milk until she calves—will average sixteen quarts in June and July."

James Spear showed a native cow nine years old, bred in Falmouth, which "will average sixteen quarts per day while in milk, and during June and July, gave thirty quarts per day;" was fed in winter on hay, and at each milking with swill with about three pints of meal. Three neighbors certify to having frequently seen thirty quarts drawn from the cow per day, at three milkings.

HEREFORDS.

E. and P. H. Holmes, Winthrop, exhibited a half blood Hereford cow, which breed they commend "for oxen and for beef, for hardiness, good feeders, good workers and good lookers; best adapted for stock, but fair for milkers. The cow gave twenty quarts of milk in July: have not observed much about it at other times, but she holds out her milk well."

Darius Forbes, South Paris, showed a Grade Hereford bull; says—"I prefer the Hereford for its large size, good feeding properties, the readiness with which they take fat, their hardy character, and their good working qualities."

SHEEP.

Joseph Percival, Waterville, exhibited a flock of Leicester sheep; prefers this breed as "especially adapted for mutton, being larger, hardier, and mature earlier; take on fat easier, raise more lambs in proportion than any other breed, having generally twins."

SWINE.

W. M. Ladd, Winthrop, exhibited full blooded Suffolk boar and sow; "regards this breed as superior to any other on account of the facility with which they take on fat, and its superior quality; has kept them for breeding, and stints them in food, as otherwise they get too fat for this purpose; are very docile and quiet, always apparently at ease in body and mind; are not so likely to be cross to their young as others."

F. O. Henley, Portland, exhibited sow with twelve pigs; "the pigs by H. V. Bartol's Suffolk boar; has had four litters in seventeen months of eight, fourteen, eleven, fourteen, making forty-seven in all."

John Kezar, East Winthrop, says:

"One litter of pigs which I have entered is six weeks and three days, and the other six weeks and four days old; they are the progeny of those breeds which have been most popular in this State; and I have procured some breeders from other States; their size is large and thrifty, and one was from a sow which weighed over six hundred pounds when dressed; one litter came of a sow raised in Rowley, Mass., and was said to be a cross of the Chester Co. and Mackey, which was said to have made the thriftiest and heaviest hogs of any breed which they had tried in that vicinity; she is five years old, raised ten large litters of pigs, and fully proved the superiority of her breed; the other litter came of one of her pigs, which is two years old; the pigs have been fed with corn while on the sows."

POULTRY.

Statement of Dr. E. Holmes, Winthrop.

I have found the English red cap hens to lay as many eggs as any breed I ever kept, but they do not set very readily. I feed them on corn, with meat, offal, &c. In the winter, ruta bagas, potatoes, cabbages, and such like vegetables cooked, are very excellent for them.

I find the Brown India goose and the African goose to lay two and sometimes three litters of eggs in a year. The Br men geese have never laid but one litter in a season with me.

Statement of F. Crawford.

Brama Pootras, Chicks eleven weeks old. This breed of hens I consider superior to all others I have ever raised for laying, and also for size, and being large bodies and small wings, are easily fenced from the field or garden. A picket fence four feet high, is ample to keep them enclosed, as they cannot fly over it. The mother of these chicks was a last summer chick; commenced laying about last Thanksgiving time, and has laid almost constantly since; she has laid fifty-nine eggs in sixty consecutive days this summer; eggs not quite as large as Shanghai's.

Mixed Breed, four and a half months old. Very fair layers; first rate breeders.

Shanghai. Good layers, large, and easily fenced.

Bantams, two years old. Fancy hens; fair layers.

Spangled Poland. First rate layers; seldom want to set before three years old.

Common Ducks. Large size, and flesh very delicate; good kind for market.

Feed. I find hens, like all other animals, do better on variety of feed, than on one kind altogether. My hens lay double the eggs when fed with corn and barley, than when fed on either alone; oats are a good substitute when barley cannot be obtained. I give my hens as often as once a week, some kind of animal food, such as tallow scraps or beeves liver, and find it beneficial. When fed in this way, they may be shut up in a small yard, if necessary to keep them so, and they will lay equally as well, as when at liberty. In fattening, they do much better when shut up in a dark place; good, clean, sweet food and as much as they will eat and no more is important. Boiled rice or dough, made of corn meal, is as good as any thing for feed; plenty of clean water is also important. They will, when kept in this manner, be well fattened in seven or eight days. The above breeds of poultry, with the mode of feeding, is the best I have ever been able to obtain. I have taken some pains in experimenting, and have found my present method the most profitable, and if in the opinion of your committee, any portion are worthy of the premiums, I respectfully request the same may be granted.

Honey.

Statement of John Furbish, Brunswick. "My honey was made in Brunswick, and was produced from flowers by the bees; neither do I believe it best to feed bees when it can be avoided. The hive was made about fifteen by twelve inches in the clear. This box was set on the top, having the entrance at the bottom, through holes in the top of the hive. In taking honey from the bees I use the bee dress, by which means any operation may be performed with perfect safety to the person. After taking the honey from the hive, I remove it a short distance, when the bees will soon leave."

Statement of Sylvester Davis. My honey is made from the first early blossoms, which I am enabled to get, by stopping the passage from the brooding hive to the honey boxes, and early in the spring I feed my bees with a liquid feed, so as to fill (*in a measure*) the brooding hive, and when the first blossoms appear, I let my bees into the boxes, which enables me to get a superior quality of honey from that which is gathered from later blossoms, such as fire weed, buck wheat, &c., and by thus managing, I get a much larger quantity, as well as a better quality. My hive is constructed of wood and glass. The hive is sixteen inches long, eleven inches high, and eight inches wide, with glass in front end, with slide door, so as to see the bees, &c., with passages through the top to the honey boxes on a line with the side of the hive, saving the bees the trouble of passing through the comb in the hive to get to the boxes, which are on top of the hive, covered by a chamber. It (the hive) is set on a platform made to receive the feed drawers and filth drawers, and covered with wire cloth, through which the filth drops to the filth drawer below, and supplies the worms and moths with food of their own liking, and giving a good ventilation to every part of the hives, honey boxes and feed drawers, and saving the bees the necessity of carrying out the filth or tramping through it to blacken up the comb. The cleanliness of the hive, and its perfect ventilation, serves much to keep the honey in its pure and natural state, as well as giving health to the bees.

MAPLE SUGAR AND SYRUP.

Statement of Samuel F. Perley, Naples. "My sugar orchard is situated in Naples, Cumberland county, on an eastern side hill, rather moist and rocky. The trees are principally rock maple, and from six inches to two feet diameter. They are tapped with a five-eighth inch auger bit. The sap is caught in wooden tubs, kept clean, and is gathered once in twenty-four hours, or if the weather is cool, at longer intervals, always being careful to collect it often enough so that it shall not sour in the tubs. It is poured, as gathered, into a large trough or cistern, and to each barrel is added one quart clear limewater, and boiled as soon as may be, to the consistence of thin cane molasses, when it is strained through flannel, and left to cool and settle, say twenty-four or forty-eight hours. It is then carefully drawn off, leaving the sediment; and to a quantity sufficient to make one hundred pounds sugar, add two quarts skimmed milk, and stir well together before heating. It is then placed over a fire, and heated slowly till the scum rises; after this is removed, boil with a steady heat till it will grain. Turn off into pans to grain. The clarifying process may be repeated, if a light color is desired, though this is at the expense of the peculiar maple flavor. The sample presented was clarified but once, and but partially drained, it being preferred damp for use. The syrup presented received the same treatment, except that it was taken from the fire before it reached the condition for sugar."

Statement of N. Hinkley, Monmouth. The sugar was made from trees, of rock maple, mostly of small size, second growth. I tap the trees about two inches deep, with a five-eighth inch bit. I boiled the sap in sheet iron pans, placed over an arch until it became syrup; then took it to the house and clarified it with milk and white of eggs, and boiled until it would grain, then placed it in pans to cool. When cool, I put it in boxes made small at the bottom, with holes in them to allow the syrup to drain off. On the surface of the sugar I placed wet flannels and renewed them daily.

BREAD.

Miss Georgiana A. Craig, of Readfield, who obtained premiums for white and brown bread, says the white was from the Drew wheat (winter) grown on her father's farm, and mixed with milk yeast; let stand one hour, to rise, then baked till done. The brown was made of rye, three parts—Indian two parts; for one good sized loaf, half cup yeast, half cup molasses, mix, let stand one hour to rise, then bake about six or eight hours.

Miss Flora L. Smith, of Norway, aged sixteen years, says of her wheat bread:—One-third of a table-spoonful of dry powdered hop yeast was soaked in a tea-cupful of milk, twenty minutes; to this one-sixth of a tea-spoonful of dry salæratus was added. This was mixed with two-thirds of a quart of new milk, then a sufficient quantity of flour was stirred in, but not kneaded. It was then left to rise sufficiently for baking, when a table-spoonful of solution of salæratus was well stirred in. It was then baked in a brick oven, one hour and fifteen minutes.

Miss Mary A. Lunt, aged thirteen years, says of her wheat bread: To one quart of warm water, add sufficient flour to make a thick batter; add one teaspoonful salt, to be kept quite warm till it rises to a sponge; then mix flour enough to mould into loaves; let it rise one hour, and bake three-quarters of an hour. No salæratus or yeast is used.

Mrs. Elliot Smith, of Norway, says of her brown bread, that it was nine-parts of rye to seven parts of Indian meal. To four quarts of meal, in proportion as above, was added four table-spoonfuls of molasses; one table-spoonful of dry powdered hop yeast, mixed with water, and left to rise two hours. It was then baked in a brick oven ten hours.

Cranberries.

Mrs. R. K. Goodenow, Paris, showed fruit grown on soil from which the turf had been taken, plowed, and one-half inch sand applied, and kept free from weeds.

John Mead, South Bridgton, showed cranberries grown on moist upland soil, with some granite stones upon it. About three inches on top of black mould, then gravelly or sandy about two feet lower. The vines originally came in the mowing ground, of themselves. About eight years ago we plowed the ground *where they then grew*, turning the vines over; then cut the turf to pieces and carried to the grass land where we wanted them, and set them into the wet places, just putting them in right side up without any further care. Cost of setting them out not over fifty cents.

N. B. -They were planted on run-out mowing land, and have had no manure only what the water has carried on.

John T. Davis, Biddeford, states—that the marsh upon which his cranberries grew, was purchased by him about three years ago. It was then wild. I put a dike around it, and cut out the bushes, and then put sand on it, and flowed it three times a year. The first year I raised about fifteen bushels; the second year about twenty bushels, and this year forty-two bushels per acre. This marsh was sanded after the cranberries were gathered, each year. I think sand is the best manure that can be applied to a cranberry marsh. The marsh was flowed in the fall, and then let the water off in May, and then flow it again the first of August, to keep the insects off, and then again in September, to keep off the frost. Expense of harvesting forty-two bushels twenty dollars; value of crop one hundred twenty-six dollars.

WHEAT.

Samuel Gray of Harrison, testifies to a crop of "Blue Straw" or "Banner" wheat grown on a sandy loam, friable, of a dark color, with an open, pervious subsoil. The land has previously to this crop had common cultivation, and the year before had a crop of corn raised upon it. The present year it had been plowed nine inches deep, and ten loads of stable manure were applied previous to sowing the seed. On the first of October sowed broadcast thirty-four quarts of wheat without any previous preparation. The crop had no after culture or application. On July 25th harvested twenty-five bushels of wheat and one and a half tons of straw to the acre. The land on which the wheat was raised was on a hill side, and was considerably washed by the fall and spring rains. He is of the opinion that he could have harvested fifteen bushels to half an acre, if the land was not washed by the rain.

Expense of raising and harvesting, $23.

Value of wheat at residence, $2.25 per bushel.

Daniel Lancaster certifies to a crop of Malaga wheat grown on a clay loam of a dark color. The soil was broken in the fall, and planted with corn in spring of the previous year and cultivated on an even surface. When plowed for wheat it was allowed to lie for a few days, and was then thoroughly harrowed; and after sowing, it was harrowed twice, and rolled with a light roller. Sowed on the 7th of May. The wheat was soaked in the strongest pickle, and dried off with slacked lime, and allowed to remain twenty hours before sowing. The wheat was sowed broadcast, two and a half bushels to an acre. On the 15th of Aug., when full in the milk, the grain was harvested —twenty-two and a half bushels of sixty pounds to the bushel per acre. The straw was one and a half tons after thrashing.

EXPENSE.		RETURN.	
Plowing, harrowing, rolling and sowing,	$4 50	Twenty-two and a half bushels at $2,	$45 00
Seed and preparation,	4 50	Straw,	6 00
Raking with horse rake, &c.,	1 42		
Thrashing, &c.,	7 56		
	$17 98		$51 00

Philo Clark of Turner, entered a crop of wheat grown on one acre, a fine, light and friable soil, reddish yellow, with a subsoil which is sandy for two feet below the surface. The previous cultivation was grass, and a crop of corn last year. Last fall plowed deep, this spring it was harrowed before the seed was sown. On the 30th of April sowed broadcast with the wheat two hundred pounds guano at a cost of $6.67. The wheat was of a kind called "Oregon." The seed was washed and afterwards rolled in four quarts of quicklime dry slaked. Two bushels sown per acre. On the 17th of August, as soon as the wheat was out of the milk, harvested nineteen five-eighths bushels to the acre.

Cost.		Value.	
Plowing,	$2 00	Nineteen and five-eighths	
Harrowing,	2 50	bushels wheat at	
Manure,	6 67	$2.25,*	$41 15
Harvesting,	3 00	Deduct	14 17
	$14 17	Profit,	$29 98

Indian Corn.

George P. Hooper of Paris, enters for premium a crop of King Philip corn, grown on a light, friable, loamy soil, of a light brown color, with a hard, gravelly subsoil, impervious to water. In 1855, potatoes were planted with a very light dressing of stable manure in the hill, on a newly broken sod. The present year the ground was broken to the depth of eight inches, and harrowed lightly. Applied two-thirds of a common barn shovel full of manure from the hog-pen to the hill, worth in all about $8. On the 20th of May planted, dry, five grains in each hill; hills three feet apart; rows three and a half feet apart. Hoed twice at a cost of $3.87½; and on October 4th harvested (stalks being cut off previously,) seventy-nine bushels of ears on half an acre. A bushel of ears of corn weighed fifty-one and a half pounds; and a bushel of ears shelled made twenty-four quarts, and weighed forty pounds. Stalks were fed in the field and not weighed. The tops made an ox-cart load.

---

*It will bring $3 per bushel for seed.

Expense.		Produce.	
Plowing,	$1 50	Corn fodder,	$15 00
Harrowing,	50	Corn at $1 per bushel,	59 25
Furrowing,	50	Manure left in ground,	2 67
Manuring,	1 50		
Manure,	8 00		76 92
Cutting stalks,	1 25	Deduct expense,	21 87
Harvesting and husking,	3 75		
Seed and planting,	1 00	Profit,	$54 05
Hoeing,	3 87		
	$21 87		

James Walker of Fryeburg, certifies to a crop of eight rowed yellow corn, grown on a gravelly loam, not very hard, rather fine, of a dark color, with a hard and gravelly subsoil. A part of the field was cultivated the previous year with potatoes and a part was in grass. The preparation of the land was plowing to a depth of eight to ten inches, at an expense of $4, and harrowing. Put on sixteen cart loads from a barn cellar. About the last of May sowed corn in hills twenty inches to two feet apart; rows three and a half feet apart. The seed was soaked in barn yard water and rolled in plaster. Ashes and plaster were applied, one gill to a hill before hoeing. On the 26th September harvested one hundred and two bushels of good ripe corn. The corn was cut up at the roots because it was labor saving. Five tons stalks dry enough to put in mow without injuring.

Items of Expense.		Produce.	
Plowing and harrowing,	$4 00	One hundred and two	
Manure,	32 00	bushels sound corn,	$102 00
Top dressing,	2 50	Six bushels of soft corn	
Seed and planting,	2 50	and pumpkins,	4 00
Hoeing $6; and harvesting $6,	12 00	Fodder,	25 00
			131 00
	$53 00	Expense,	53 00
		Profit,	$78 00

Of the above, fifty-six rods in potatoes last year, yielded forty-five bushels; and one hundred and four square rods of green sward yielded fifty-seven bushels, in all one hundred and two bushels, after allowing an eighth for shrinkage.

Statement of A. and W. True, Litchfield. We, A. and W. True, hereby certify, that from one acre of ground we this season have raised eighty (80) bushels of corn, ascertained by weight, when well dried, which was done on the 24th of November. The soil was a dark, rocky loam, upland, slightly inclined to the east. For twelve years previous to last spring it was cropped with grass without top dressing. In the spring of 1855 it was turned up and planted to potatoes, after light dressing in the hole. On the 19th of last May we plowed it once to the depth of six or seven inches, then harrowed and cross harrowed with an ox harrow. We then furrowed it one way with a light plow and horse, and cross marked east and west with chains, making the rows three feet each way. Six cords of long stable manure were spread on and turned under with the plow; three cords of old barn manure were put in the hole. We used for seed the "Large Dutton Corn," from five to seven kernels to a hill. The manure in the hole was first covered to the depth of an inch. May 22d, we planted the corn, covering to the depth of two inches. When the corn first broke the ground we put on eight bushels of ashes mixed with a small quantity of lime. We went through the rows each way with a cultivator, and made slight hills with the hoe, on the 10th of June; went through the same process again June 26th; it received no other cultivation except pulling a few weeds in August. Topped the stalks September 13th; harvested about the 15th October; it was immediately husked and put in the crib. Our work was principally performed with oxen and men; ox work in days, six; horse work two days; we had a boy four days; the manual labor we compute at twenty days' work.

George W. Freeman of West Bridgton, entered for premium on crop of corn of one hundred and forty bushels ears on one hundred and fifty square rods of dark colored loamy land; soil eighteen inches deep, and lying on a hard, gravelly subsoil; in grass the previous year; plowed eight inches deep 10th May, 1856, and spread ten loads green manure, and put eight loads of old manure in the hills, which were three feet apart, and rows the same distance; eight quarts seed used of the kind known here as the "Pitch Knot," and preferred to any other; cultivated twice, and hoed twice; cut up at roots perfectly ripe 10th October; not topped previously. The corn (ears) weighed forty-eight pounds to the bushel.

6720 pounds, worth	$70 00	
Fodder, 5000 pounds,	12 50	
White beans, 1½ bushels,	2 25	
		$84 75
Paid for labor,		25 00
Six cords manure?		$59 75

S. N. Watson of North Fayette, entered for premium on twenty bushels barley, grown on half an acre, dark, loamy soil, eighteen to twenty-four inches deep, to a hard, gravelly subsoil; planted to corn in 1855, having had six cords manure spread and plowed in; plowed in 1856, eight inches deep; harrowed three times and rolled once; sowed broadcast at the rate of three bushels seed to acre; mowed 28th July soon after being full in milk.

VALUE.		EXPENSE.	
Twenty bushels at $1,	$20 00	Preparing soil,	$5 00
Straw, 1½ tons,	6 00	Harvesting,	2 00
		Threshing,	2 00
	26 00		
Deduct expense,	9 00		$9 00
	$17 00		

Statement of Daniel Lancaster, Farmingdale. Mr. L. certifies to a crop of barley, grown on a half acre of dark colored clayey loam; had been in grass for ten years; plowed eight inches deep in fall of '54; planted to corn in spring of '55; manure spread and plowed in and cultivated with an even surface. In spring of '56 plowed again deep enough to bring up old sward, and finely harrowed; sowed one bushel to the half acre broadcast and without any previous preparation, on the 7th May; no after culture or application; was harvested 15th August; should have been done 1st August; crop thirteen bushels to one-half acre, and if well threshed would have been fifteen, of fifty-eight pounds to bushel.

Value thirteen bushels at $2,	$26 00	
Straw, ...	4 00	
		$30 00
Expense in all, . . .		7 88
		$22 12

He also certifies to a crop of oats on similar soil and with same previous treatment as above, except that it was planted to potatoes instead of corn; three bushels of seed to the acre being sowed in May, and harvested (in August when full in milk or a little turned) ninety bushels on two acres of thirty-one pounds to bushel.

Value 90 bushels at 50 cts.,	$45 00	
Straw, . . .	20 00	
		$65 00
Expense; plowing $4; harrowing $4; sowing 75 cts.; seed $3; mowing and raking $3; threshing $6.60; carting $2; other expenses $1.25; in all, . . .		24 60
		$40 40

James Robinson of Durham, entered for premium on twenty bushels of pea beans, grown on half an acre of clay loam, which had been in grass eight years; plowed last fall, ten inches deep, a light coat of barn manure spread, and small shovelful in the hill, (thinks green barn manure will prevent rust,) planted May 12th, hills two and a half feet, rows three feet apart; cultivated and hoed twice; harvested 20th September; weight seventy-eight pounds per bushel; value $2 per bushel.

C. O. Kilborn of Bridgton, entered for premium on twenty and a half bushels barley, of fifty pounds to bushel, grown on an acre of light yellow loam, on a hard gravelly subsoil, two feet below; planted to corn the previous year, when six cords of manure was applied; none this year; plowed eight inches deep, planted 12th May, harvested when dead ripe, 15th August; expense $3, for plowing and harrowing; $2 for harvesting. He also applied for premium on one hundred and thirteen bushels of winter rye, grown on four acres and thirty-five rods of burnt land. Value $142, and at a cost of $35. But as it did not appear to come within the conditions, which were for "the best conducted experiment," no premium was awarded.

Benjamin Morse of New Gloucester, also applied for premium on forty-six and a half bushels of rye, from one bushel and two quarts sowing, on one and one-fourth acre of burnt land. Expense $13.50; value of crop $57.12. No premium awarded, for reason as stated above, the object in bestowing premiums being not for a great crop, so much as to encourage carefully conducted experiments, which shall elicit information as to the best modes of culture, manuring, &c. The man who carefully and systematically conducts an experiment, the results of which are of value to the community, even though it results in failure, is better entitled to a premium, than one who succeeds by accident or by cropping virgin soil, in obtaining a large return for his labor.

E. H. F. Smith of Gorham, aged eleven years, raised three bushels of ears of rice corn on five rods, (or at the rate of ninety-six bushels to the acre,) with four days work of himself.

W. D. Dana of Perry, obtained a premium on specimen of spring Iowa wheat, grown on a clayey loam, which in 1852, yielded only one-half ton hay per acre; cropped with oats in 1855, after two years pasturing—the wheat sown in spring of 1856, with two hundred pounds guano per acre—plowed ten inches deep—harrowed well.

Statement of John Kezar, East Winthrop, of one-half acre corn, on which no premium was awarded. The land on which we raised the half acre of corn on which we have entered for premium, had been pastured for a number of years, previous to 1855. A small part of it had the wash of the barn yard, and was very rich, and the remainder had received considerable manure by being pastured. About the 25th of May, 1855, it was plowed, and a part planted with corn, and a part sowed with oats, without adding any manure. May 19th, 1856, ten loads of mixed manure, of good quality, was spread on such parts of about two and one-half acres, (including the one-half acre entered,) as was not considered rich enough for corn.

The ground having been previously plowed, was then harrowed, and the rows made, and corn dropped by one operation, and by one hand, with a seed sower. It was then covered with a horse, by turning two light furrows upon the corn. After the corn had sprouted, and before any of it had come up, the top of the ridges was raked off with a garden rake, which destroyed all the weeds that had started. At the first hoeing it was thinned to from four to six inches in the row. It was hoed twice, but we did not think of entering it for a premium, and kept no account of the expense of hoeing. The ears were gathered from the stalks October 8th, and measured fifty-eight bushels of sound corn, which we ascertained would yield twenty-nine bushels of shelled corn, and four bushels of ears of hog corn. The fodder is now tolerably dry, and weighs two thousand ninety pounds.

We estimate the expense of preparing the ground for planting, at	$2 00	29 bushels corn, 90 cts.,	$26 10
Planting,	75	4 bushels ears hog corn,	1 00
Raking off, 4 hours work,	50	Fodder, 2,090 lbs.,	4 50
Hoeing first time, one day,	1 50		$31 60
Hoeing second time,	2 00		
Harvesting,	2 50		
	$9 25		

CARROTS.

Hiram Fuller of Hallowell, writes me that he obtained at the rate of nine hundred sixty-six bushels per acre, of carrots, by manuring a clayey loam with the residue from his glue manufactory. It is easy to perceive that the residuum after steaming glue from pates, &c., is not only rich in fertilizing matter, but it is in a condition to be very readily appropriated, by growing plants. No such resources for manuring the land should ever be allowed to pass unimproved.

PROCEEDINGS AT THE ANNUAL MEETING OF THE

MAINE STATE AGRICULTURAL SOCIETY.

Tuesday, January 27, 1857.

In the afternoon the Society met according to adjournment, Mr. Britton (Vice President) in the chair.

On motion of Mr. Forbes, voted, that a committee of three be appointed to receive, sort and count the votes for officers, and Messrs. Forbes of Paris, Little of Bangor, and Fuller of St. Albans, were appointed.

The committee after receiving the ballots, reported the following persons elected as officers of the Society for the ensuing year, viz:

President—Samuel F. Perley, Naples.

Secretary—E. Holmes, Winthrop.

Treasurer—William Caldwell, Augusta.

Trustees—T. S. Lang, North Vassalborough, Daniel Lancaster, Farmingdale, Seth Scammon, Saco, F. T. Purington, Topsham, Job Prince, Turner.

On motion of Mr. Forbes of Paris, voted to hear the report of the Treasurer.

Mr. Caldwell then made the following report, which was accepted.

Treasurer's Report.

Agreeably to the law, I present my second annual report of the financial transactions of the Maine State Agricultural Society, for the past year:

The balance on hand in 1855, was . .	$939 80
Amount received in 1856, . . .	9,936 16
	$10,875 96
The disbursements amounted to . .	7,951 69
Leaving a balance in the Treasury, December 31, 1856, of	$2,923 27

There was received from all sources at the late fair and show in Portland, the sum of $8,935.16, and the expenses attending the same, so far as the bills have been audited and paid, amount to $5,536.07, and there are a few outstanding bills which I have been unable to obtain, amounting to about $250.

The premiums awarded, so far as the committees have reported, amount to the sum of $2,159.12, and there is due and uncalled for, of premiums awarded in 1855–6, about $560. There were also about one hundred and fifty diplomas awarded for various articles exhibited.

The first annual payment of $1,000, granted by the State, provided the Society raise an equal sum, for five years from 1856, to be paid in premiums for the encouragement of the various department of agriculture, &c., has been received.

Of the sum of $500 granted by the State in 1855, for the encouragement of the raising of flax in this State, only $10 have been paid out, leaving $490 unexpended, which sum is included in the $2,923.27 balance in the treasury.

I would recommend that under the direction of the Trustees, a portion of the funds now on hand, say $2,000, be invested in State or bank stocks.

I herewith exhibit a detailed statement of the receipts and expenditures.

All of which is respectfully submitted.

WILLIAM CALDWELL, *Treasurer.*

It was then voted to hear the report of the Trustees. Mr. Lang read the following report which was then referred to a committee of three, consisting of Messrs. Lancaster of Farmingdale, Buxton of Yarmouth, Fairbanks of Augusta.

TRUSTEES' REPORT.

The Trustees of the Maine State Agricultural Society for the year ending January 1st, 1857, submit the following report:

It is within the knowledge of all who are familiar with the business concerns of the society, that the active duties of the present board of Trustees did not commence until the latter part of June; the performance of certain duties which will devolve upon the Trustees in future having been provided for by the late Executive Committee. About the middle of June, the Trustees received notice from the Secretary of the Society, that the committee having that matter in charge had decided that the show and fair for the season should be held at Waterville. A meeting of the Trustees was at once called at that place, for the purpose of making definite arrangements for the exhibition. On consultation with the Trustees of the North Kennebec Society, upon whose grounds it was proposed to hold the fair, and from whom the proposition to the State Society to hold its show in Waterville came, it was considered of doubtful expediency to attempt to hold the show at that place. Having heard the desire very generally expressed, that the exhibition of the State Society should be held in Portland the current year, the Trustees adjourned this meeting to that place; and having received a favorable proposition from some of the leading business men there, it was decided to change the location of the show and fair to the city of Portland.

Of the success of the exhibition as an exhibition, the multitude there present as spectators, with leisure to examine, are better judges than the Trustees. Of its success financially we can only say, the year was commenced, as shown by the Treasurer, with an empty treasury—it closes with $2,923.27, as a fund in store for the future. The Trustees with pleasure acknowledge the efficient aid rendered the Society by the citizens of Portland, in subscribing to a contingent fund; and especially would they acknowledge their obligations to the officers and members of the Board of Trade, the Mechanics' Association, the Mercantile Library Association, and the City Committee of Arrangements, for their assistance in money, time, labor and counsel, in preparing the grounds and halls, and in conducting the Show.

The Society is yet in its infancy, and it would have been strange indeed, if, at the outset, the best methods of managing its concerns had been devised and acted upon. Each succeeding year will doubtless suggest improvements, and the experience of the one just closed is not wanting in its lessons of instruction for the future. The Trustees take the present occasion to offer some suggestions for the consideration of the Society, relative to the future management.

AMENDMENT TO THE CONSTITUTION. Having the general supervision of the affairs of the Society, contracting all bills and auditing the same, it would facilitate the labors of the Trustees, by amending section five of the constitution, so that the Treasurer shall be authorized to disburse the money of the Society on the order of the Trustees, without the signature of the President and Secretary. The Trustees should be required to procure and keep an order-book, with marginal records, so that it may readily appear for what purposes the funds of the Society have been paid.

ART. 2. Of the Rules and Regulations. Considerable loss accrued to the funds of the Society, and no little confusion in the halls, requiring an extra amount of police force, from the abuse of membership tickets. It is suggested that hereafter, no annual membership tickets be issued; that the tickets, as checks, be of uniform appearance and price; that members be furnished with a certain number of tickets, to be specified by the Trustees, in consideration of their having united with the Society; and that all persons on entering the grounds, or halls of the Society, during the hours of exhibition, be required to deliver their tickets to the door-keeper.

ART. 3. Much confusion and delay is occasioned by the neglect of contributors to enter their articles in proper season. It is recommended that hereafter, the provisions of Article three, of the general Rules and Regulations, be strictly adhered to, and that premiums be withheld from all those articles or animals not entered according to the rules; but a gratuity of less amount than the premium offered, may be awarded on such article or animal as would have been entitled to a premium if entered in due form.

During the past year, following the examples of Societies of high standing and of more experience than ourselves, and for the purpose of increasing our receipts, comparatively high premiums have been offered on horses—excelling only in speed. The expediency of continuing to offer such premiums on speed alone, may be considered doubtful; for, while thus replenishing our Treasury, we may alienate from the Society the good will of some of our best citizens. The subject is worthy the careful consideration of the Society.

The railroad companies in the State, with few exceptions, generously reduced their rates during the week of the exhibition, affording every facility to exhibitors and visitors that could be reasonably asked, and are deserving the thanks of all interested in the welfare of the Society; but we believe if the railroads understood their true interest, they would transfer articles for the exhibition free of charge, and by so doing secure the good will of the public, and double the amount of travel on these occasions.

SAMUEL F. PERLEY, *Per Order.*

On motion of Mr. Parlin of Winthrop, voted, to add the following persons to the committee raised at the last meeting (in October) to confer with the Superintendents of the several Railroads in Maine, viz: D. Forbes of Paris, and H. N. Hunt of Readfield, so that the committee now consists of Jedediah Jewett of Portland, John D. Lang of N. Vassalborough, Seth Scammon of Saco, D. Forbes of S. Paris, and H. N. Hunt of Readfield.

The Secretary then laid upon the table copies of the Patent Office Reports for 1855 on Agriculture, for 1854 on Mechanics, also packages of seed of the Chinese sugar cane, presented to the Society by the Commissioner of Patents.

On motion of Mr. Forbes, voted, that the books be reserved and offered as premiums, and that the cane seed should be distributed to the several County Societies, under the direction of the Trustees.

(N. B. This seed has been handed over in small lots to the several members of the Board of Agriculture for their respective Societies.)

On motion of Mr. Foster of Gardiner, voted, that the Trustees be instructed to offer liberal premiums for the manufacture of drain tile in this State.

On motion of Mr. Goodale of Saco, voted, that the Trustees be directed to offer a liberal premium for the best essay on farm accounts, to be accompanied with a simple and efficient system of book-keeping for the purpose.

The committee to whom the report of the Trustees was referred, reported sundry amendments of the constitution, a part of which were adopted.

Voted, That the thanks of this Society be presented to Samuel Butman, Esq., for the impartiality and urbanity with which he has presided over it for the two last years, and for the interest he has manifested for its prosperity and welfare.

On motion of Mr. Foster, voted, that the Trustees be instructed to make discrimination in their offers of premiums on stock, in favor of the grower of it. Adjourned.

E. HOLMES, *Secretary.*

ESSAY.

BY JAMES OLCOTT BROWN, OF PORTLAND.

"On the Intellectual Wants of Farmers, and the most Practicable Mode of supplying those Wants."

Happily the old sentiment, that there must necessarily be an antagonism between the life and disposition of an educated man, and the life and disposition of a common farmer, is fast losing the ground it once so tenaciously held in the minds of a large class of persons. The youngest man of to-day may easily remember the time when farmers looked with latent suspicion, if not downright animadversion on any attempt to institute a new order of things. The way their fathers plowed and planted and reaped, was to them a surer criterion of success than the soundest deductions of an experimental science. To abandon the "faith of those fathers" was an act of heresy quite too unwarranted and startling, to require any sympathy from them. Hence we find, as we always may under similar attendant circumstances, that no positive improvements were either matured, or even indeed inaugurated in agricultural economy. The progressive tendencies however, of our republican institutions, the prominence and position of the educated man, and the dependency of the State upon the individual, have done much to displace the foolish prejudices ever prevalent among farmers and to foster, at the same time that it arouses, an emulous zeal for a higher and nobler order of culture. What that is, science and history are fast demonstrating.

It was an old time idea, far too much in vogue, that the smartest sons of a country family should be sent away to enjoy the advantages of a liberal education and a professional life, whilst the less nobly endowed child should be kept at home to till the paternal acres in the unvarying routine of a prescribed system. But the farmer of the present day is ill fitted to succeed, nay, is ill deserving of success, who is not well informed in matters that were once deemed abstruse, who does not know the connection between agriculture and chemistry, or the dependence of the former on practical science and scientific formulas. So that now, to speak of the "intellectual wants of farmers," is not, as it was once, an almost paradoxical association of terms, but a fitting question for every intelligent mind.

The grandest feature of our whole political economy is, that the simplest inhabitant is not only a citizen, but a legislator and a lawgiver, so that he wields by his own mind and his own franchise, an influence over those who, otherwise, might never come into his own immediate sphere. The mere interchanges of trade would possibly continue, though neither party knew aught of governmental policies, but the stability of our national existence depends on the political intelligence of the masses. Hence the farmer, no less than the merchant or professional man, is called upon oftentimes to superintend, if not indeed to dictate measures of great practical utility; to decide by his own individual action what shall or shall not be the future deportment of his country at home or abroad; and upon his vote, it is not too much to assert, (the present, if not) the whole future character of the government may possibly depend. Therefore it will be plain, it seems, that the farmer should possess a general knowledge of history from the earliest ages downward to this "last and best result of time;" should be able to discern what one cause or aggregate of causes had subverted the nicest speculations of political philosophers; should know under what circumstances peculiar policies have had their origin, and by what means they have culminated or failed. And though this, to a casual observer, may seem an undue requisition, yet upon reflection it must be patent to all, that no loyal citizen of a free country should be without such information, just as no true representative citizen who has become prominent in the respect and reliance of his neighbors *is* without it. But as these are intellectual wants which pertain fully as much to any and every other class of men, I pass to those which are more peculiarly the "wants of farmers." And they may be generically considered as containing that information which the proper and productive culture of the land demands.

In the early history of an agricultural country, the simple sowing of the seed is sufficient to insure a healthy harvest. The soil possesses a spontaneous nutriment amply able to sustain the first crops. And this method will obtain just so long as the soil continues unexhausted. In some countries from natural causes, it never loses its inherent worth, and all adventitious assistance is unnecessary. The farmers who live on the banks of the Volga, finding their manure a useless burden, carry it out upon the stream in winter to be floated down to the Caspian, in early spring. But we, who live in this country, and especially in this portion of the country, experience no such difficulties. The time, under ordinary circumstances, will come when a new treatment is demanded. And he who can best ascertain what that treatment is, and can most advantageously avail himself of it, is thenceforward the best farmer. How then shall he ascertain what that treatment should be?

Not certainly, by assuming that agriculture is not an adventurous and a progressive art; not certainly, by relying with the utmost confidence on the wisdom of our fathers, deeming them to have attained the maximum of all agricultural information and success; not certainly, by having an unhesitating recourse to imitation and conjecture. But, on the other hand, most certainly by ascertaining what is the present character of the soil, —what treatment is best adapted to its requisitions,—what it has lost that deprives it of its former excellence,—and what will restore it to its original state, or advance it to a still higher grade. And this is by no means an impossible task. The practically scientific man is well aware that "science can analyze the wants of a plant or grain, as well as the components of a soil, and declare what the one demands and the other should yield. He thus knows at once what crops he must put upon the soil, or what soil he must bring to the crops. This enables him to husband, as well as create or combine, his manures, and rightly to manage their application. It directs his labors to the most economical results, and leads him to deal with his exhausted land, as the skillful physician does with his sick patient. He neither guesses at the disease nor applies the remedies at random."* This equally every *farmer* should know, and thence learning from successive experiments the invaluable resources which chemistry discloses, he no longer need fear a deterioration either in his harvests or his soil. His manures which formerly, through incautious use were deemed insufficient would then be found, by careful husbandry and chemical assistance, fully able to meet every requirement. His soil instead of losing strength each succeeding year would daily recuperate itself.

---

* See Address on the "Agricultural Progress in Massachusetts for the last Half Century," by Charles Theo. Russell.

Among the many marked instances of this undeniable value of a knowledge of chemistry, one occurs in the recent introduction of phosphate of lime as a manure. Reliable experiments have ascertained that its application to the soil is highly beneficial, while it is generally within the reach of the commonest farmer. The refuse bones which were formerly thrown away as useless, are found to contain fifty per cent. of this manure, and old fish skins are quite as valuable, containing full forty-eight per cent. It becomes then a matter of moment to a farmer, whose land fails to sustain the crops it once supported, to ascertain whether his soil possesses a sufficient quantity of this necessary component, or whether it is suffering from a lack of it. Every soil is composed of certain elements or ingredients in definite, though often different proportions. This variety of organization, (if I may use the term in such a connection) is that which determines the fitness of the soil for its requisite requirements. Every farmer, therefore, should know what are the peculiarities of his soil, or rather perhaps what is its organization, and conversely, what is best adapted for it. But the sustenance of successive crops is constantly exhausting some one or more of its component parts; it is necessary consequently to add to the soil that which it has lost, in order to restore it to its original vigor and excellence. If he knows primarily what is its composition, and what are its properties in such a state, he may thence be able to ascertain in what respect, and how far it has deteriorated. This deterioration, as remarked above, is occasioned by the loss of some one or more of its elementary parts. To restore them is the next difficulty that presents itself. Chemistry alone offers a satisfactory way.

Returning, therefore, to our illustration—for which, and the one succeeding, I am indebted to the admirable Address of Dr.

True, delivered before the Cumberland County Agricultural Society, some two or three years ago—whenever the farmer finds that his land would be greatly benefited by the addition of some such manure as the phosphate of lime, he looks about for the best means of obtaining it. The artificial phosphate, owing to its greater solubility and more immediate efficacy, is far superior to the mineral phosphate, which is at the same time more expensive. In order to obtain it, the refuse bones are to be dissolved in sulphuric acid; the liquid is then poured over sawdust or some other substance which shall serve to retain the peculiar properties of the manure. In this state it may be applied to the soil.

Many other illustrations might be brought forward to prove the value of an acquaintance with, at least, some of the simpler facts of chemistry. One or two, however, of very general application, must suffice. Lime is acknowledged to be a most admirable manure, but its proper use requires a knowledge of its capabilities as well as the character of the soil for which it is to be used. Some soils are known to contain a sufficient quantity of it in themselves, without any extraneous application. For instance, under ordinary circumstances, it is extremely useful in the cultivation of the potato, since it acts as a retainer of moisture; it would be highly injurious, therefore, where the soil was already sufficiently damp. A knowledge of this simple fact would teach a farmer when, where and in what quantities this manure should be applied, to produce the most desirable results. Ignorance of it might deprive him of the full benefit of a large portion of his land. Again; lime acts as a powerful remedy against the injurious effects produced by the composition of iron and sulphur in a soil. A sufficient number of illustrations have been adduced, it is believed, to prove that a knowledge of some of the fundamental principles of chemistry is one of the primary "intellectual wants" of every farmer. How that information is to be obtained, I will endeavor to state farther on.

Much might be written to prove the necessity of careful thought on the part of every farmer. It is certainly an "*intellectual want*," though it may not admit of any generic position. Careful thought, a ready appreciation of the comparative value of different propositions, a keeness of perception in analogous instances, a hopeful yet at the same time prudent reliance on experience and deduction, and a prompt seizure of every means of improvement which they may disclose—all of which result in a great measure from a proper culture of the mind, are essential to the highest success in farming as they are in every other vocation of life. Leaving out the learned professions which necessarily require the keenest intellectual development, the duties of a successful farmer demand as high an order of mind as those of any other occupation. A dunce will prosper no better in this sphere than in any other; the whole history of the science declares it; every advancement is an acknowledgment of it. And no where else is it more plainly apparent that such qualifications are necessary and advantageous than in horticultural pursuits. The great increase in the interest and success with which this department is managed furnishes most cheering evidence of the fact. It was once deemed almost impossible for a person of a ripe age to enjoy the fruits of an orchard which he had himself planted. But now, through the careful and thoughtful attention paid to the result of varied experiences, occasioned by the publication of horticultural information, an orchard may be made productive in a very few years, and remunerative in less time than was formerly required for even an earnest of future excellence. By the process of grafting, and through the application of proper remedies to destroy the vermin which infest the trees, orchards may now become a permanent and reliable source of profit.

Again; an almost incredible change has been effected in the value and usefulness of live stock by a more general and watchful attention to their food and shelter. A generous rivalry in this particular seems to animate all classes of farmers, and we may anticipate as the result of it, an improvement in the strength, endurance and general character of breeds which will place them on an equality with the far famed English varieties. The capabilities of our soil and climate in this particular have never been fully tested. What a quickened and healthy activity of thought may yet accomplish, in this and every other branch of a farmer's education, we hope soon to know. Certainly the first evidences are most encouraging. Every exertion ought at all times to be made to foster this growing thoughtfulness, which will in due time make known its own deficiencies, and conversely therefore its own intellectual wants. The fool deems himself an expert logician, a profound philosopher, an educated scientific man. The honest thinker, however, is painfully conscious of his own short comings, and struggles to rise superior to them. Every such hearty endeavor will evince some decided improvement which is but a stepping stone to other and grander successes. What therefore, is necessary to arouse a greater degree of thoughtfulness, as well as foster that which already exists among farmers? Or, to assume the language of our subject—"what is the most practicable mode of supplying the intellectual wants" which this increasing thoughtfulness discloses?

The establishment of Agricultural Colleges under the control and patronage of the State was always a favorite project with the late lamented Downing, whose life and teachings ought ever to be held in grateful remembrance by those who honor the utterance of a sincere and noble heart, and cherish a desire for the culture and adornment of our "waste places." It is a matter of great regret that he never lived to see his designs carried out, or even fully matured in his own mind. Farther attention might possibly have suggested essential modifications, or a total abandonment of the plan. It has always seemed to our mind a costly, and on the whole, a very incomplete remedy for existing evils. It necessarily removes the student, to a great degree, from the appropriate field of his labors, prevents the test of actual experience on his own lands, institutes a speculative rather than a sound and convincing thoughtfulness, and brings to bear other influences than those which a proper attention to his calling demands. While in the practical carrying out of the plan, it yet remains to be proved that the requisite attention to the out-of-door demands of such an institution can ever be made to harmonize with a devotion to the more scholarly requirements of the college discipline, which have ever been found to be adverse to manual labor. The pupil may be able to write an excellent and convincing essay on the comparative value of different breeds of cattle, but will that fitly prepare him for the ofttimes unpleasant and always exacting duties of daily farm life. I do not by any means assume that these are full or satisfactory answers to the many arguments adduced in favor of such an institution; nor am I prepared to say positively that it may not be the best means for attaining required information. I only present them as some of the significant objections which naturally occur to mind.

On the other hand, the best attested mode of supplying these wants, and in our opinion, really the most practicable, is the proper circulation and attentive perusal of agricultural and horticultural journals, documents, treatises, and statistical tables, together with regular meetings among farmers of a social and conversational as well as business character. A very large proportion of the improvements which have already occurred we may safely refer to the first of these means. They have proved that "book-farming" is not merely an idle and expensive amusement for confiding, retired gentlemen, but the cheapest and most productive mode of cultivating the land. They have served, also, to arouse the farmer to a just sense of his rights; to the necessity of a sound education, and to the importance and nobility of his vocation. A vocation which has won the attention, and beautified the lives of some of the noblest men in history—a vocation, the charm of which ever present to his mind, fragrant with the purer memory of early days, brighter than all his plans, sweeter than all his triumphs and his joys, has been potent enough to lure many a man of business away from the crowded, weary, though successful paths of mercantile life, many a man of laborious, professional duties, away from their exacting but remunerative demands, to the fresh fields, the bud and bloom and beauty of the country—a vocation which like the mild lustre of the evening star has ofttimes cheered as well as illumined the twilight days of life. They have done more to place farmers on an equality with other classes of men than all other causes combined, for they have proved that as an independent class it has its own rights to maintain, and its own influence to wield. So that politicians have confessed their utter inability of subduing in the usual way the honest sentiments of the rural districts.

In the department of horticulture, the journals have within the last fifteen or twenty years effected a most radical change, raising it from its former neglected position to the rank of a separate and most important division, numbering among its advocates many men who have devoted the best years of their lives to its advancement, claiming several periodicals having an especial reference to its interests, and many elegant and most profusely illustrated works. Through their influence it has taken a stronger hold on public attention in this country than in the best cultivated districts of Europe. Ten years ago the value of the horticultural interest of the country was estimated to amount in its products to $459,000,000, being almost as large as the whole manufacturing returns. Now when we take into consideration that in 1851 Downing estimated that the planting of orchards and fruit trees for the preceding five years had been three times as great as in any previous five years, and as we know from experience that for the last five years this ratio has by no means diminished, we may have some idea of the importance which horticulture has already attained, and is destined, in a still greater degree, to attain hereafter through the influence of its appropriate journals. Farmers have begun to see how much more productive their orchards can be made by an approved system of attention than by the old slovenly mode.

Another subject, for a knowledge of which we are indebted to these periodicals—and which may be incidentally mentioned in this connection—is that of reclaiming land which has become sterile through a ruinous system of overworking. In many places in the United States, especially in those portions longest settled, land is constantly depreciating in value on this account for farming; and the ignorant owners or settlers, either deeming it an evil which cannot be prevented, or considering it too laborious and expensive a task, move off to fresher and more uncultivated localities. The journals have always steadily attacked this wretched system of constantly absorbing, by successive crops the inherent excellence of a soil, without ever adequately recuperating it. Whatever advancement has been made in this particular, and it is undeniably a great one, is due entirely to their exertions. It would seem indeed that the difference between ten and twenty-five or thirty bushels of wheat to the acre—which has been accomplished through their agency—was a practical benefit startling and decided enough to arouse farmers to a more general and appreciative sense of their excellence.

The proper dissemination also of text books, tracts and statistical tables devoted to the general subject of agriculture would excite in every village and on every farm a fresh and healthy interest in all that pertains to the improvement of land, stocks and fruit, would quicken the intellectual development, at the same time that it incites the physical system to a heartier exertion, and would arouse a generous and noble emulation between different farmers and different sections.

Again, this knowledge could be fostered and retained by social gatherings among farmers, or by the more formal and presuming county associations, both of which are extremely useful in nourishing an *esprit du corps* which unites the different members together in sympathy for the success of their common endeavor. At such gatherings, much of the more intimate experience of a farmer's life would be made known which might otherwise never attain any general circulation, the repeated struggles that at last resulted in success, and the various evils which a cautious care had remedied. In this way also, discussions would arise that might disclose the germ of most fortunate experiments and improvements, which deriving fresh light from the attention and thought of every person present, could not fail in the end of producing the highest results.

Not the least noticeable feature moreover would be the increase of a genial sociability of disposition, a stronger confidence in each other, a delightful faith in neighborly kindnesses, diffusing a brightness and warmth over the improvement which a contact with individual minds must always occasion. Thus not only will the intellectual faculties be advanced, but the whole man cultured and improved. There will be a growing attention to, and a growing regard for, the humanizing and liberalizing influences of literature. The farmer will not only be better and more successful in the discharge of his immediate duties, but he will be also a better citizen, a better neighbor, a better host, a better man and a better christian. His family will become a delightful social circle of which he is the central charm and support. All those social amenities which accompany the culture of the intellect and the body when each allows the other its appropriate and healthy activity, will brighten and bless with their cheerful and genial irradiation. So, life to the educated, thoughtful farmer will daily seem less like a burden, more like the realization of an ideal existence.

YORK CO. AGRICULTURAL SOCIETY.

Show and Fair held in Saco, October 1st, 2d and 3d.

Expenditures, 1856.

Working oxen and teamster,	$44 00
Cows and heifers,	19 00
Sheep and swine,	26 00
Bulls and steers,	58 00
Fat cattle,	10 00
Plowing match,	24 00
Spading match,	6 00
Mares and colts,	19 00
Horses, entire and working,	38 00
Horses, trotting,	16 00
Dairy products and bread,	19 00
Poultry,	11 00
Fruits and Flowers,	28 00
Manufactures,	7 00
Carriages, harnesses, &c.,	16 00
Honey,	5 00
Paintings, daguerreotypes, &c.,	16 50
Ladies' committee,	39 70
Incidental committee,	14 50
Incidental expenses,	200 00
	$620 70

Receipts.

Received of members,	$222 00
Sale of tickets, &c.,	418 49
	$640 49

Besides the above, this Society has, during the present year, expended nearly three thousand dollars in the thorough preparation and enclosure of grounds, &c., for purposes of exhibition, in Saco—the land being leased to the Society by the town at a nominal rent, for twenty years.

EXTRACTS FROM REPORTS OF COMMITTEES.

Horses.

The business of raising *good horses* has of late years become profitable in this State. Horses raised in this State deservedly bring good prices, being considered an active, hardy breed. It costs no more to raise a good horse than a poor one; and by attention to breeding, farmers may be almost sure of having good stock. We are satisfied that the attention of farmers is being directed to this matter. A personal acquaintance with the stock of young horses in this county, affords us evidence of the improvement already made in the size, style and quality, of this noble class of animals. We regret that so few were exhibited. Our County Fairs are always a place of resort for horse purchasers, and affords one of the best markets farmers can have for this kind of stock. We hope for their own interest, as well as for the interest of the Society, they will in future bring in their stock for competition and exhibition. We know there are many horses in this county fully equal to those exhibited, and would have been entitled to premium if entered.

The most of the stock was far above an ordinary character, but nevertheless we confidently anticipate another exhibition will show the improvement of this kind of stock now going on. See to it farmers, that York county shall become celebrated for its horses.

Owen B. Chadbourne, *For the Committee.*

AGRICULTURAL IMPLEMENTS.

The Committee on Agricultural Implements find that the greatest variety was exhibited by Messrs. Fry and Hussey of North Berwick, and to them we award the Society's first premium.

Two of the committee have used the same variety of plows as those exhibited, and know something of their qualities from actual experience, and consider them superior to any used in this vicinity. Although they are some two inches higher than common, and have the advantage of clearing themselves, they draw equally as easy as those so low as to require clearing.

The beams of those exhibited were larger than necessary, but this should not be considered an objection, as we are aware that it is not the case with all of their plows.

There was also exhibited an ox cultivator, which we consider of superior qualities.

Knowing that these implements are manufactured from the best material, both wood and iron, we recommend them to the farmers of this vicinity.

SAMUEL MILLIKEN, *For the Committee.*

MILCH COWS.

None of the competitors gave so definite statements of their animals as the rules of the Society require, which are as follows:

"*Milch Cows.* For the best milch cow, not less than three years old, with satisfactory evidence of the quantity and quality of her milk, and the manner in which she has been fed, certificates of which must be filed in writing, of the product of her milk and butter made from the cow during two periods of ten days each. Three months, neither more nor less, shall elapse between two periods of trial aforesaid, and the last trial shall be completed before the date of the annual exhibition. In cases where the milk is not made into butter, the quantity and weight of the milk must be stated, time of the cow's calving, and quality of the calf. Verbal statements cannot be depended upon or received."

The object the society has in view, in requiring these statements, is to collect and disseminate information, as to the best method of managing stock, so as to secure a profitable return. To do this, we must go into particulars. The kind and amount fed, the manner of feeding, and in short, the whole treatment of the animal, is necessary in order to judge correctly if the product of the animal will pay. The best treatment possible, doubtless is the most profitable. We should vie with each other in the proper and profitable treatment of all animals under our care. "A merciful man is merciful to his beast." No animal half fed, and poorly housed, or left to find a resting place during the night in the mud and dung half leg deep, can be expected to make a very bountiful return. Your committee cannot forbear the remark here, that if cows half cared for (as some of the statements would seem to indicate) produced such returns, what wouldn't they do under more favorable circumstances!

Marks of a good cow. "Thin skin—flat horns—open space between the back ribs—yellow udder—full sized teats—large milk holes and veins—escutcheon all right. To rear such, be sure that the male has descended from the *best cow* of the herd. It may be, that a good cow is not always sure to have a good calf; but it is quite certain, that a poor cow never will."

S. SCAMMAN, *Chairman.*

DAIRY PRODUCTS.

Although there were parcels of good and very good butter exhibited, there were none which possessed *such marked superiority above the article as usually seen in our markets,* as to entitle it to distinction, and award of premiums. The fault being mainly, that it was not so thoroughly freed from buttermilk as to warrant the belief that it would *retain for any considerable length of time,* its present flavor and quality. The committee believe that there is far less attention paid to this subject than it deserves, the fact being that *pure butter,* that is, the oily portion of milk, if it can only be completely separated from the casein, which milk always contains, will keep sweet and nice as easily as lard or any other animal oil, and that too without salt or sugar—but practically it is found to be very difficult to free it so completely from the curdy matter, as to keep well without the addition of salt; yet if proper care is taken, an ounce to the pound is amply sufficient, or even less, so that the amount necessary to give the butter the proper relish or flavor, secures its safe keeping. The error of most butter makers is, that deeming salt necessary to preserve the butter, they also reckon that a little more salt will counteract the bad effects of leaving a little more buttermilk in the butter. Not being able at this time to discuss this point so fully as is desirable, the following remarks from the pen of a practical and scientific writer, are commended to our dairymen and women:

"If we examine a given quantity of milk, we shall find it to consist of a *mixture* of five substances, viz: water, curd, (casein,) butter, (oil,) sugar, and a small quantity of salts. Milk from various animals, as well as from the same animal when partaking of different kinds of food, varies considerably in the relative proportions of these component parts, though this variation is not very great in animals of the same species. The following table gives about the average composition of cow's milk:

1,000 ounces of cow's milk contains, of

Pure water, about	850	ounces.
Butter, (oily matter,) about . . .	55	"
Curd, (casein,) about	48	"
Milk sugar, about	43	"
Mineral salts, (phosphate of lime and magnesia, soda, common salt, &c.,) about . .	3½	"

That these substances are mingled rather than chemically united, is proved by the ease with which they are separated without the aid of chemical agencies. Thus, by careful evaporation, we can drive off the whole of the water, leaving the other ingredients in a dry solid mass, with no material change in their composition or properties. The water constitutes about *six-sevenths* of the whole weight of the milk.

Set milk in shallow dishes, in a moderately cool place, and allow it to stand at rest for from forty to sixty hours, when nearly all the oil (or butter) will rise to the surface, owing to its being lighter than the other substances. This proves that the oil or butter in the form of cream is not chemically united with the water, but merely floats in it. The butter ordinarily amounts to about one part in fifteen to twenty parts of milk, though instances are given where seven to ten pounds of milk have yielded one pound of butter.

Remove the cream and keep skimmed milk from souring and the curd (casein) will not separate from the water. But add any sour substance, such as vinegar or any of the acids, and it will at once curdle—that is, the curd will separate into a mass by itself. Take out this curd and put it into pure water, and it will not be dissolved again; but add some soda or salæratus to the water, and it will then dissolve the curd. If we examine new milk, or uncurdled skimmed milk, chemically, we shall find that it contains a little soda. These and other experiments show that casein or curd is not dissolved in pure water, but that it is held in solution in milk by means of the free soda present. If milk is allowed to stand exposed to air for a time, it sours of itself—that is, some of its own elements change to an acid, and this acid neutralizes or destroys the free soda existing naturally in the milk, and the water not being able to dissolve the casein or curd without the soda, the casein separates into a "curdled" mass, just as camphor in solution separates into a flocky mass when water is poured in to withdraw the alcohol. By adding soda to milk faster than it is used up by the acid formed in souring, we can keep milk from curdling weeks or months. About twenty-five pounds of milk will produce one pound of *dry* curd. Cheese is curd, containing some water and more or less oil or butter.

After the oil and curd (casein) is removed, we have left what is usually called *whey*, which is chiefly water containing sugar and the small quantity of salts above described. Carefully evaporate the whey to dryness, and we shall have left a quantity of sugar not unlike common white sugar, though a little less sweet to the taste. There will be a little more than one pound of this sugar to twenty-five pounds of milk or whey. Mingled with the sugar will be a little more than an ounce of soda, phosphate of lime, and other salts, which can be separated by chemical processes.

If the *oil* of milk—that is the butter—be perfectly separated from all other substances, it does not easily decay or undergo change. Indeed *perfectly pure* butter can be kept for a series of years entirely unchanged, and this too, without the addition of salt or other antiseptic. In this respect it is like pure tallow, lard, olive oil, &c. The *casein* or curd, on the contrary, contains an element (nitrogen) not found in oil or butter, and it decays very rapidly, unless preserved by the addition of salt or other means. Separate it from the soda in the milk by washing it with water, and if exposed at common temperature it commences decomposition immediately.

This distinction between oil and casein (butter and curd) is an important one, and upon a proper understanding of this depends success in butter-making and butter-keeping. The secret of *making* good butter lies in so raising the cream, so churning, and so working, as to free it from the casein; the secret of *preserving* butter lies in counteracting the effects of any particles of casein remaining in the butter after it is made.

The butter or milk-oil is contained in very small sacks or bags which float in the water holding the casein and sugar in solution. Cream consists essentially of these oil sacks with some of the casein adhering, from which it is impossible to separate it before churning, and not wholly, afterwards."

Statements and scraps gathered from Statements.

LIVE STOCK.

Statement of John Hanscom, Saco. "This cow is eight years old; suppose the breed to be a mixture of *native* and *Devonshire.* She is remarkably kind and docile in every respect. She weighed, at the time of her calving in May last, twelve hundred pounds; fleshes up very quick when not giving milk. I purchased the cow of Mr. William Hussey of North Berwick; got her home the last day of May this year. She is now much thinner in flesh than at that time. Her pasture this summer has been a lot—too small if it had been good—containing about one and a half acres, on clayey ground, that had been mowed until it would pay to mow it no longer. She has had nothing through the summer but the grass feed from this pasture, till within three or four weeks. I have taught her to eat shorts and corn; never had anything but hay and grass previous to my buying her, not knowing how to eat grain of any kind until taught by me within a month past.

I consider this cow superior for milk, and unequaled in this vicinity for butter, making it of a very yellow color, solid and waxy, and usually taking not over five minutes to churn. For my own gratification, I have taken a little pains to see what we got from the cow through the summer, to know whether or not it was going to pay, to keep a cow in a village. Through the month of June she gave an average of about thirty-one pounds of milk a day, by actual and careful weight—the quantity at morning and night about equal. She had a calf which was three weeks old on the 1st of June, that had what of her milk he would take for one week, and then was taken from the cow, having the most of her milk for a week or ten days more skimmed, after setting till a portion of the cream had risen. From the 9th of June to the 8th of July, we made twenty-five and a half pounds of butter, supplying three or four neighbors with a quart a day, and using liberally ourselves—breaking up pans of milk at any time for the benefit of transient customers. The quantity of milk set during this time was not over six quarts per day, and this during a few days at the first giving but a portion of the cream, and also there is to be brought into the account two or three days about the 4th of July when the milk was about all sold. The cow now gives, running in the same pasture as through the summer, about eighteen pounds of milk a day. During ten days, viz: from the 19th of September to the 29th, my wife made seven pounds of butter—setting no milk more than two or three nights during the time, and not all mornings. We have sold something like thirteen dollars worth of milk during the months we have had the cow, made over sixty pounds of butter, used all the milk we wished in the family, and raised a pig from a small size to one hundred and fifty pounds on little else than sour milk.

As to the qualities of this cow for breeding. Her last calf I have now, which bids fair to be a cow such as her mother."

Samuel Millekin, Saco, rears grades of Ayrshire and Devon, deeming them to "combine stock and milk properties in high degree;" also "Durhams, which he esteems for growth and docility; steers, the progeny of a cross of Durham and Devon with Native cows, he esteems "for toughness, superior color and intelligence."

Nathaniel Millekin, Buxton, exhibited oxen from a cross of Durham and Devon with Natives, which he esteems highly for hardihood and docility.

Bradbury Atkinson, Saco, exhibited native cow kept on pasture feed in summer, and hay and rough fodder in winter, yielding ten quarts per day during the whole period in milk, and thirteen quarts during June and July.

Joseph Hobson, Jr., showed milch cow with no extra keeping, breed not given, averaging sixteen quarts per day during June and July.

Rufus P. Tapley, Saco, regards the stock grown from the "Challies" horse, sometimes called Black Morgan, as preferable to any other in this vicinity, for extraordinary combination of qualities, for speed and labor in the same animal, and being easily broken to use.

Israel Emmons thinks a breed "part Morgan and part Arabian, good for travel, very kind, and cheaply kept."

J. Marshall prefers Messenger breed "for size, docility, aptness to learn, easily trained, good for work and for travel."

Charles E. Storer, Saco, states of his boar named "Prince Albert, of Berkshire breed, reared by Lord Sefton, imported from England November, 1854, that it is perfectly kind, cheaply kept, and very thrifty; has served within the year seventy-six sows; all his pigs very handsome."

S. J. Abbot states that the "Sumatra Pheasant Game" fowls, "fed with corn and oats, produce the largest number of eggs with the least expense."

Statement of John Millekin, Buxton. The fowl that I present for your examination, consists of one old turkey and seventeen young ones, of the black kind. The young ones were hatched about the 26th of June last, and have not been fed otherwise than what they have got from my field since they were two weeks old, until within one week. Last year I raised twenty-four of the same breed, and sold them in Portland market at twenty cents per pound; the gobblers weighing from ten to eleven and a half pounds.

I also present eighteen hens of the breeds of Cochin China, White Dorking, and Black Spanish, which have laid on an average ten eggs per day during the last year; also about sixty-five chickens of the above breeds, with nine of the Bolton Greys.

I sold last year, in September, six chickens of the Cochin China breed for $4.64. I also sold six at Thanksgiving time, averaging five and a half pounds each, for $6.60.

Another competitor (name not given) on fowls says: "My opinion is that Cochin Chinas are as good as any other if rightly fed, but will not compare with others when left to seek their own living, they being very destitute of activity; and from this fact I am induced to deem them the best for farmers to keep, as they commit less depredation upon his crops than others."

Statement of E. G. Collins, Saco. I offer for premium cross breeds and the Brama Pootras; mode of feeding is waste from the factory boarding house, mixed with meal and a little corn. They have laid remarkably well, thirty-seven hens have laid upwards of three hundred dozen eggs from February to October 1; besides I set two hundred eggs. All my fowls, turkeys, ducks and hens, have laid all the time, except a short time when sitting. For size and producing eggs, and fine fowls, managing and keeping cheap, I think I have superior fowls. I love to take care of and raise them, as well as I love their eggs and meat well cooked by a good housewife.

Preserves.

Statement of Mrs. A. H. Jellison, Biddeford. These citron preserves are prepared first, by scalding in alum water till transparent, then taken into a wire sieve for the purpose of draining. To each pound of loaf sugar add one gill of water, dissolve, skim, then add your citron; scald about twenty minutes; cool it, and then add lemon sufficient to give it flavor. These preserves have been made one year without being scalded but once.

Honey.

Mr. T. P. S. Deering, Biddeford, uses Miner's cross-bar hive; takes the honey away in supers from the top of the hive; produced five hundred and ten pounds in eleven hives the past season—one yielding seventy-nine pounds after June 20th.

Corn, &c.

Joseph Frost of Elliot, applied for premium on a crop of corn of one hundred and fifty-two bushels of ears of sound corn, and twelve bushels inferior, grown on one hundred and ninety-two rods of land which was in grass two years before, and last year planted with corn, when about fifteen loads of stable manure was spread and plowed in eight inches; also spread ten loads compost on surface, harrowed thoroughly, and a gill of ashes and plaster added in the hills. This year plowed as deep as the plow would go, turning up the old sod and manure—spread fifteen loads compost and stable manure to the acre; hills three feet and rows three feet asunder, four seeds to each hill, the variety long planted here, and resembles the brown corn, but earlier. Cultivated twice, passing it four times through each row, and hoed twice. Was cut up and shocked September 29th and 30th, the grain being nearly all glazed over, stalks very green, but became well made, and good fodder, worth double what it would be with the tops taken off. For the last twenty years has cut it up at the ground, deeming it greatly preferable, and the unripe grain ripens much better also. The stalks, four tons, he considers worth $8 per ton. In shocking it, he puts a stake in the ground, sets the corn loosely around it, ties at top, and puts on a cap.

Estimated expense on the Crop.

Plowing one day, two men and four oxen, . .	$4 00
Seventeen loads manure, $34; half to future crop, .	17 00
Two men, one pair oxen one and one-half day carting manure, ...	5 25
One man one-half day spreading manure, . .	50
Man and oxen one-half day harrowing, . .	1 00

Three men and boy one and one-half day planting, .	$5 25
Seed corn, ...	37
Cultivating, man, boy and horse one day, . .	2 00
Twelve days, men hoeing, ...	12 00
Harvesting corn-stalks and beans, . . .	12 00
	$59 37

CROP.

One hundred and fifty-two bushels ears sound corn, or seventy-six bushels shelled corn, at 84 cents, .	$63 84
Three tons stalks, $8, ...	24 00
Two bushels beans, ...	4 00
	$91 84

Statement of Samuel Millekin, Saco, on green corn fodder. "I offer for premium, the product of forty-two rods of green corn fodder, planted about the middle of June, in rows three feet apart; strewed the seed in a line varying from one to two inches; planted on clayey loam, about one-half of which had been manured for carrots the two previous years, with green barn manure, about six cords to the acre, each year. Planted this year without any kind of dressing; it grew beyond any thing I ever saw. We weighed, when green, a bundle that grew on an average row, fourteen feet in length, which weighed ninety-three pounds; length of stalk from eight to eleven feet. The other half was planted on green sward, with about the same amount of barn manure spread and plowed in nine inches deep. Put into the furrow, a small quantity of old rotted manure, well mixed with sea sand. The crop is without precedent in my neighborhood. I commenced cutting for the milch cows the middle of August, and fed them with it every morning for about six weeks, which caused them to give a third more milk."

Edmund P. Dennett of Saco, a successful market gardener, in his statement of mixed crops and samples shown, says that he uses the double mouldboard plow, and runs it fifteen inches deep; his soil a light fine loose sand with some dark sand or loam; uses compost manure, costing about $2 per cord; ten to twenty cords per acre, for cabbages, tomatoes, cucumbers, carrots, squashes, &c.; for turnips, prefers it as a top dressing soon after sowing; cost of growing vegetables from $25 to $75 per acre in addition to the manure; crop of turnips and carrots fifteen to thirty tons per acre; beets rather less; value of crops, $125 to $250 per acre.

Samuel Whitten of Saco, grew thirteen thousand five hundred pounds of ruta baga, sold for $90, on half acre of light fine sand or sandy loam; in grass last year; plowed eight inches deep and manured with two hundred and twenty-five bushels leached ashes for which he paid 11⅛ cents per bushel, $25.03; sowed June 14, in drills, twenty-two inches apart; four ounces seed per acre; harvested October 25th to 30th.

Expense plowing, . . .	$2 25
Ashes, ...	25 03
Spreading same, ...	2 00
Harrowing, ...	1 00
Seed 12c., sowing 50c., weeding $2, .	2 62
Harvesting, ...	5 00
	$37 90
Deduct from value, . . .	90 00
Profit, on the half acre, .	$52 10

Mr. Whitten also grew four hundred bushels orange carrots per acre on same light, sandy soil, eight inches deep; plowed ten inches deep, and subsoiled this year with three hundred pounds guano applied, costing $9; sowed in drills fourteen inches apart, June 6th; seed soaked and rolled in plaster, three-fourths of a pound per acre; cut the weeds twice.

Expense; plowing,	$3 00	Estimated value of 400 bushels of 55 pounds each at 20 cents per bushel,	$80 00
Guano,	9 00	Deduct	29 75
Harrowing and raking,	2 00	Profit,	$50 25
Planting, $1; seed, 75,	1 75		
Weeding,	6 00		
Harvesting,	8 00		
	$29 75		

He also grew white beans (blue podded) on same soil, to which was applied twelve one-horse loads compost valued at $4; planted in hills fifteen inches apart, rows forty inches, June

11th, using one-half bushel seed per acre; cultivated and cut weeds twice; harvested August 29 and 30; crop twenty-seven bushels per acre of sixty-eight pounds each.

Expense; plowing,	$3 00	Estimated value; 27 bushels at $1.90,	$51 30
Manure,	4 00	Expenses,	20 25
Spreading same,	2 00		
Harrowing,	1 00	Profit,	$31 05
Seed, one-half bushel,	1 25		
Planting $1.50; cultivating $3,	4 50		
Harvesting,	2 50		
Threshing and winnowing,	2 00		
	$20 25		

George Chadbourne, Sanford, entered for premium on mixed crops grown on one acre, and makes the following statement of cost and products on one acre of improved land, value $100.

Interest on same,	$6 00
Seventeen loads stable manure,	17 00
Three barrels home made guano,	4 50
Two barrels ashes,	1 00
One-half day's work, one man and one yoke of oxen,	1 00
One-half day, two hands and one yoke oxen plowing and harrowing same,	3 00
Three days work planting same,	3 00
One and one-half day fitting and sowing garden,	1 50
Weeding garden, &c.,	2 50
Three and one-half days hoeing first time,	3 50
Two days second time,	2 00
One day third time,	1 00
For marketing vegetables,	2 00
	$48 00

AMOUNT RECEIVED FROM SAME.

July, sold potatoes, onions, &c.,	$4 75
August, sold potatoes, green corn, onions, cucumbers, &c.,	9 00
September, sold potatoes, green corn, cabbages, apples, pumpkins, &c.,	10 50

Amount	unsold, thirty-two bushels corn at $1,	$32 00
"	twenty bushels potatoes, at 3s. per bushel,	10 00
"	thirty bushels beets, carrots, parsnips, &c.,	15 00
"	forty bushels turnips, at 2s. per bushel,	13 33
"	twelve doz. cabbage at $1 per dozen,	12 00
"	one hundred pumpkins at 10 cents,	10 00
"	eight bushels grafted apples, at $1 per bushel,	8 00
"	ten bushels common winter apples, at 50 cents,	5 00
"	fifteen bushels cider apples at 2s.,	5 00
		$134 58

CUMBERLAND CO. AGRICULTURAL SOCIETY.

This Society held no Exhibition during the year 1856, as the Show of the State Society was held within their limits, and by advice of the Executive Committee of the State Society the County Fair and Show was merged in that of the State Society.

OXFORD CO. AGRICULTURAL SOCIETY.

The Oxford County Society held its Annual Fair and Show at Norway.

The expenditures for the year are:

For premiums on crops, ...	$31 25
" premiums on agricultural operations, .	35 00
" premiums on manufactures, . . .	26 25
" premiums on live stock and all others, .	168 00
Total for premiums, ...	$260 50
For building for use of fair, . . .	1,000 00
" stone work to same, ...	73 00
" work on building and grounds, . .	37 56
" incidental expenses, . . .	111 22
	$1,482 28

FROM REPORTS OF COMMITTEES.

HORSES.

Your committee would suggest, that the admitting of trained horses on the track at our Agricultural Shows, is calculated to defeat all practical good therefrom. If any good can come from the track, it is to exhibit the qualities and make a reputation for horses in the hands of our farmers and breeders, which they wish to sell. We would therefore recommend, that none but horses from our farms, that have never been trained to the track, except as a preparation for our own show, be admitted to the trial of speed. We would also recommend that all persons with horses and carriages and on horseback, be prohibited the use of the track, under any pretense and for any purpose whatever, during the days of the show, except by special permission of the track superintendent.

Household Manufactures.

There were many articles which your committee would be glad to notice separately, but space and time are not allowed to do so. They would say in general terms, however, that this department was well represented by articles of great merit, many of which displayed an amount of taste, skill and industry, on the part of the women of this society, worthy of all praise, and which your committee hope to see emulated in all coming time. But there were two specimens of work which we cannot allow to pass without specific notice. The one is of a skein of yarn and a pair of stockings, spun and knit by a lady ninety-one years old; and a pair of mittens, spun, colored and knit by a lady eighty-one years old. These samples of manufacture cannot be easily improved, and it is to be hoped the *young* will be provoked to good works by these examples.

Miscellaneous Articles.

We cannot refrain from calling the attention of *everybody* to the "Galvanized Iron Portable Ovens," manufactured by R. S. Stevens & Co., South Paris, and commending them to every family in the county. Five sizes of the oven were on exhibition, from No. two to six, inclusive. The materials of which they are made, are good, and the mechanical work well done. But these are its most insignificant merits. It is emphatically what its name purports, an *oven*. In its form it is very nearly a cube. The walls of the oven are made of a metallic non-conductor, with air chambers, so that no heat is lost by radiation, which fact not only renders it a most convenient apparatus to be used in hot weather, but in an economical point of view saves *all* the heat generated by the very small quantity of fuel, while in cold weather, by substituting the radiating funnel, it is amply sufficient to warm any cook room.

The small quantity of wood required seems almost miraculous to one unacquainted with its construction and principles. The fire-box is comparatively very small, occupying a very small space at the bottom of the oven, which, though "filled never so full of wood, can contain but little," while the heat is as essentially under the control of the baker, as the steam of the locomotive is under the control of the engineer, both having their escape valves and their dampers.

In a word, the "Portable Oven," in its theoretic construction, must commend itself to every scientific mind that observes it. Its theoretical merits are sustained by an experimental success attested to, by very many innkeepers as well as others, not only in our midst, but throughout the country.

Live Stock.

Horses. *Statement of Amos F. Noyes, Norway.* Mr. Noyes received the first premium for colts "of any age." His was a Morgan, two years old. He says: "My manner of summer feeding is not extra. I turn them into common pasture, but make a practice of stalling nights, when the weather is cold or it is wet and uncomfortable. It is not only a benefit to the animal, but a saving of manure."

"My mode of winter feeding and managing is to feed only good bright hay. I give one pint of oats per day and the same quantity of potatoes, on an average. I keep them in a warm stable, and give a plenty of water."

Neat Cattle. There appears to have been an unusual number of Devon bulls at the Oxford County Show, derived from different sources. E. D. Marshall of Paris, presented one raised by Philander Sutton, Barnstead, Canada East; A. L. Burbank, Bethel, one from the Daniel Webster farm in Marshfield, Mass.; Joseph Tufts of Paris, presented one two-years old bull, bred by H. B. & H. M. Hall, Burk, Vt., and four bull calves bred by himself.[*] Beside the bulls, there were some dozen or more Devon heifers and calves exhibited, which probably made it the largest exhibition of this breed of stock at any county show in the State.

Statement of Joseph Tufts, Paris. "I prefer the Devon breed of stock for the reason that the stock comes to maturity early—is more hardy and cheaper kept than other stock—is better for milk, making a larger quantity of butter and cheese than the common stock. They are the most quiet and docile of any with which I am acquainted."

Statement of Solomon Winslow, Buckfield. "I think the Devons are hardier, more active, and of a nicer color, and will make better oxen than any other breed I have known. * * * I have noticed the difference in cattle a great deal. We have several breeds or kinds in Oxford county, owing, I think, to their being crossed so much. We have a kind of cattle among us that are quite docile. I cannot tell the name of the breed. They have long heads, narrow between the eyes, eyes sunk into the head. You cannot teach them anything, or even make them remember where they tie up. The kind of cattle I prefer, have short heads, good width between the eyes, eyes project somewhat. They are easily taught. I depend more on the head of the animal than anything else, to determine its character. The form of the head I regard as a sure index of character in horses, cattle and men."

Statement of Darius Forbes of Paris. "The animals offered for premiums are a Grade Hereford bull, seventeen months old; a Native cow, five years old; a Grade Devon cow, four years old; a Grade Durham cow, four years old; and a Grade Durham heifer, seventeen months old. The bull was bred by Horace McKenney of Monroe; the Native cow by Ebenezer J. Pottle of Norway; the two four years old cows by George P. Hooper of Paris; and the heifer by myself. I have not had any experience in raising different breeds of stock; but from what I can learn from the most reliable sources of information, I am inclined to prefer the Herefords, because I think they are very hardy, attain a large size, manifest excellent feeding properties, lay on fat with great readiness, possess excellent working qualities, come to maturity early, and are very quiet and docile, except when hungry, when they are bound to have something to eat at all hazards."

"The heifer was brought up by hand and fed with milk warm from the cow with a little corn meal till four months old, when she was turned out to grass. Through the winter she had a plenty of good hay, with a few carrots and a little meal every day.

"All the cows are better breeders than milkers, though they are all fair milkers. The native cow holds out the longest in milk, but the grade Devon gives the most milk for two or three months after calving, or till again with calf, when her milk rapidly fails. Through the months of June and July they will average about nineteen or twenty quarts of milk per day.

"The mother of the heifer is the grade Durham, and was but two years old when she dropped her calf. She was fed on hay, carrots and meal through the winter, the quantity being increased as her period of calving advanced."

Statement of A. S. Bartlett, Norway. "I present for premium, one three years old and one four years old heifer and a bull calf. These animals are of the Durham breed. The calf is four and one-half months old. The size above other cattle, I consider a very desirable object. For workers, the oxen of this breed have no superiors. The three years old heifer was bred by Dr. Snow of Atkinson; the four years old, by Samuel Jamison of Sebec, and the other calf by myself. The calf has had what milk the heifer gave through the season. No other feed except what grass he may have eaten. He was turned with the cow twice a day. In my experience, I find them to be superior as breeders, and also good milkers; giving milk up to the time of calving if desired. Then heifers, in good feed, will average about twenty quarts of milk per day. The milk is of a superior quality. I use my coarse fodder with a few carrots and potatoes in the first part of the winter. In the latter part, I use good hay, keeping salt in an accessible place for them to eat when they choose."

SWINE. *Statement of Darius Forbes of Paris.* "I present for premium a boar and a sow with four pigs. The boar is a Suffolk and the sow a native long snout. I prefer the Suffolk on account of the early period at which they attain maturity; their good feeding and fattening properties, and the superior quality of their flesh. The boar was bred in Stoneham, Mass., but the name of the breeder I do not recollect. The sow I raised myself. I have kept them in a warm house, and fed them mostly on wheat bran, waste potatoes, raw and refuse matters from the house and farm."

Statement of A. S. Bartlett, Norway. "I present a boar pig for premium. The breed is called the Royal White. He was purchased of J. W. Bartlett, of Worcester, Mass. He has not been highly fed since he came into my possession, but as farmers usually do store pigs."

Sheep. *Statement of J. A. Thomas, Oxford.* "I present fifteen sheep for premium. They are grade Leicesters, from one to four years of age. I bred the most of them myself. I prefer the Leicesters on account of the great quantity of wool they produce and the excellent quality of their meat. I keep my sheep on hay till April, when I give them a few potatoes."

Crops.

Statement of George P. Hooper, Paris. "The land on which my crop of corn grew, is a loam. It is very light and friable, and the impervious subsoil being from eighteen inches to four feet from the surface. In color, it is a light brown. It has a hard gravelly subsoil, entirely impervious to water, overlaid by a large mass of drift largely abounding in sand. The stones are mostly granite, with a few scattering fragments of lime-stone. The land is not stoney. What stones there are, are mostly small, with now and then a boulder of moderate size. In 1855, I planted it to potatoes, with a very light dressing of stable manure in the hill, on a newly broken sod. It was plowed about six inches deep when broken up, and about eight inches the present season. Harrowed lightly. Applied two-thirds of a barn-shovel full of manure from the hog-yard to a hill, which took about two cords for the piece, worth about eight dollars. The variety of seed planted is known as the 'King Philip,' obtained from Dover, N. H. It is a slightly flesh colored corn, with very large grains. It was planted May 20, without any sort of preparation, and in hills. The rows were three feet and one-half apart, and the hills distant from each other about three feet. I put five grains in a hill. I hoed it at an expense of about the $3.87 twice. It was harvested October 4. The top stalks were cut off previous to harvesting. I approve of taking off the top-stalks, but not till the corn is fully turned, and then merely to hasten ripening. I have made no very exact experiments in this matter, to determine whether it is best to cut corn up at the roots before fully ripe, or to take off the top stalks and let the rest stand till fully ripe.

The produce was seventy-nine bushels of ears from one-half an acre, a basket full weighing fifty-one and one-half pounds; and one bushel of the ears shelled, measured twenty-four quarts, and weighed forty pounds, and the cobs eleven and one-half pounds. The stalks were not weighed, and the butt stalks were fed down on the ground. The top stalks made an ox cart load.

STATEMENT OF EXPENSES.

Plowing once,	$1 50
Harrowing once,	50
Furrowing,	50
Manure,	8 00
Applying the same,	1 50
Cutting stalks and taking care of the same,	1 25
Harvesting,	1 25
Husking,	2 50
Planting,	75
Seed,	25
Hoeing.	3 87
	$21 87

STATEMENT OF VALUE OF PRODUCE.

Corn fodder,	$15 00
59¼ bushels corn at $1,	59 25
Manure left in the ground,	2 67
	$76 92

Net profit of one-half an acre of corn, . . . $45 05

Brown Bread.

Statement of Mrs. Ichabod Bartlett, Norway. "I present a loaf of brown bread for premium, which was made from materials grown on our own farm. It was made of equal parts of rye and Indian corn meal, mixed with water only, and remained in the dough state about two hours before being put in the oven, where it remained over night."

Statement of Mrs. Ervin Robinson, Sumner. "The bread I present for premium is composed of five-eighths Indian corn, and three-eighths rye meal, mixed with cold water. To five quarts of Indian corn and three quarts of rye meal I put half a pint of sour milk, one tea-spoonful of salerætus, four table spoonfuls of molasses, knead, and put it in pans and let it stand one hour and then bake in a brick oven."

Statement of Mrs. Elliot Smith, Norway. "The rye, from which the meal was made, used in making this bread, was raised on our own premises. It is composed of *nine* parts rye, and seven parts Indian corn meal. The quantity of meal used was four quarts in proportion as above stated. I put into it four table-spoonfuls of molasses, one ditto of dry powdered hop yeast, mixed with water, and left to rise two hours. It was then baked in a brick oven ten hours."

Wheat Bread.

Statement of Flora L. Smith, aged 16 *years, Norway.* "No part of the material of which this bread is composed, was raised on our own premises. In its manufacture, I used one-third of a table-spoonful of dry powdered yeast, which was soaked in a tea-cupful of milk twenty minutes. To this was added one-sixth of a tea-spoonful of dry salæratus. This was mixed with two-thirds of a quart of new milk. Then a sufficient quantity of flour was stirred in, but not kneaded. It was then left to rise sufficiently for baking, when one table-spoonful of a solution of salæratus was well stirred in. It was then baked in a brick oven one hour and fifteen minutes."

Statement of Clara A. Daniels and Harriet L. Hersey, Paris. "This bread is made as follows: Take one part new milk, and seven parts water, one-half boiling and the other half cold, with which mix in flour till a thin paste is formed. Set it in a warm place and it will rise in six hours. After it has risen, work in flour and form the dough, which put in pans, set in a warm place, and when it rises again, bake it."

Dairy Produce.

Statement of Moses Parsons, Norway. "My dairy consists of three new milk cows, one farrow cow, and a two-years old heifer. Three calves were fed on the milk of these cows till July 12th. I have no particular breed of cows. In the winter, I keep them on corn fodder, oat straw and meadow hay, generally about half the winter. The remainder of the winter I give them English hay, but not of the best quality. I give them no roots of any kind, or provender. In the summer, I keep them in a pasture by themselves, and give them only salt beside the grass. I consider high land and a wet pasture with dry ridges and swales, the best pasture for cows."

"In manufacturing cheese, I set the milk at night in pans. In the morning the milk is strained into the tub and the night's milk added to it, and then the rennet. I use no saltpetre or anything but salt, and press twelve hours, After removing them from the press, they are dressed daily with good table butter, until dry enough for market. The whole weight of cheese produced by my dairy was five hundred and ten pounds."

Statement of Mrs. Levi Millet, Norway. "My dairy consists of five cows, and I do not confine myself to any particular breed. My winter feed is hay, roots and oats. In summer I pasture them till August, when I give them some corn fodder. I consider beets the best kind of roots for cows. In the manufacture of cheese, I strain the milk in the tub at night; in the morning I add the morning's milk and the rennet, and then thoroughly stir the whole together. I then salt and press it. I turn the cheese daily, and dress them with bacon fat and cayenne pepper simmered together. The produce of my dairy is one hundred and sixteen pounds of cheese per cow, in three months."

Statement of Daniel B. Robinson, Sumner. "My dairy consists of five cows, two that are farrow, and three new milk. I do not confine myself to any particular breed. My winter feed is straw, corn fodder and hay. In summer, they feed on grass only. In early fall, I begin to feed them on green corn fodder, sowed for this purpose in June and July. My pasture is all high and dry, and uniform in kind and quality of grasses. In making cheese, I strain the milk into a tub immediately after milking, and at once add the rennet. I dip the curd carefully into a cheese-basket, cutting it occasionally with a knife, letting it stand till it is quite dry. Then scald the curd lightly with whey. When the whey is turned off, pour in cold water, and let it stand till quite cold; then chop and salt it, and set it away in the cellar or some cool place, as we always make two days curd for one cheese. I manage the second curd in the same way as the first. When ready for the press, mix the two curds together. When pressed, let the cheese stand a day or two and dry on the outside, then cover with cloth, which I grease instead of pasting. Rule for salting: a table spoonful of salt, to a pail-full of milk."

Statement of Mrs. Nathaniel Pike, Norway. "Our dairy consists of three cows and three heifers. In winter I keep them on hay till about two weeks before they calve, when I give them a few potatoes, a little meal, and a few other roots. In summer, on grass only. The milk is set in the cellar where the air has free access, and I churn the cream alone. After the buttermilk is thoroughly worked out, I add one ounce of salt to a pound of butter, and pack it in jars, scattering salt between every layer, and also on the top to keep it from the air, and then put it in a cold cellar. In making cheese, I have changed my views in regard to curdling milk at night. In dry, warm weather, it often becomes sour and rancid, and as a consequence, the cheese hard and crumbly. I therefore think it preferable to pursue a different course. If a two curded cheese is to be made, I proceed as follows, viz: after the curd is well drained, I slice it in a leaky vessel so as to extract all the whey possible, slightly salt it, and hang it in the cellar. The following morning I prepare another curd. After it is drained, take the one from the cellar, slice them together, add hot water enough to cover the curd, and then chop it in the water. After it is drained, put it to press. Quantity of salt used, one table spoonful to a pailful of milk. After pressing, I turn and dress them daily until ripe for market. Weight of cheese per cow for the season, eighty-five pounds."

Statement of Mrs. Joel Millet, Norway. "Our dairy consists of four cows. In winter, they are fed on stock hay till the latter part of the winter, when they have some oats. In summer they have grass only. Dry pasture is the best for cows. I set the milk in a cool cellar until the cream rises, when I skim and churn this alone. I work out all the buttermilk, then salt it with pure ground rock salt. I then set it away in a cool place for twenty-four hours, then work it over again, and put it away for use. Prepared in this way it will keep very nice. The produce of butter is thirty pounds per cow per month.

"In the manufacture of cheese, I strain my milk in a tub immediately after milking, and then add the rennet night and morning. After removing the whey, I put the curd in a basket to drain. After which I chop and scald it. I allow one-half an ounce of salt to a pound of curd, and one tea spoonful of saltpetre to twenty pounds of curd, and put it to press. After the cheese is well pressed, I put it in a room to dry, and turn and rub them every day till fit for use. I made one hundred and forty pounds of cheese in the months of July and August."

EXTRACTS FROM AN ADDRESS

Delivered before the Oxford County Agricultural Society, by N. T. True, M. D.

One year ago, I attended an agricultural conference in this county, where men, who really had the least to do with agricultural operations, were inclined to say the most, respecting what ought to be done. Near me sat an intelligent looking farmer, who whispered, and explained to me how he cultivated his great crop of corn. I requested him to rise, and tell us all about it. "Oh!" said he, "I am no speaker."

Now, gentlemen, I am standing here to-day only to be the organ of that farmer, and hundreds of others, who can raise better crops of corn than I can, or, at least, than I do, but who have not the courage to inform others how it is done. One of the most striking observations that I have ever made, is the low opinion which the really successful farmer has of what he is doing, when called upon to express his opinions in public, or even in private conversation. I never spend a single half-hour with the man of ordinary intelligence, without hearing from him some valuable idea, instructive to myself, and worthy of an article in the farmer's paper; but, were I to intimate such a thing to him, he would be sure to stare at me with astonishment, and regard the subject as unworthy of notice. So varied are the different operations in agriculture, that every farmer has ideas of his own which are often original, and valuable. What I shall say to you on the present occasion may prove to be mostly made up of opinions expressed among yourselves in my intercourse among you; for you may not be aware, that, within one year, I have listened to fifty or more agricultural addresses in this county. Some of them were delivered by my neighbor's fireside, others in his garden, orchard, or cornfield, just where I could find speakers, there have I been to listen. And be assured, gentlemen, that some of the speakers were really eloquent, never at a loss for words or ideas, and always in earnest in what they advanced.

Instead, then, of addressing you on a single topic, I may take the liberty of directing your attention to a variety of subjects pertaining to the farmer's calling—and such subjects, too, as have been suggested by yourselves.

SOILS. The soils of Oxford county may be arranged in four different classes—intervale, meadow, sandy plain, and rocky upland.

The Androscoggin river, with its tributaries extending from the New Hampshire line on the west, to Livermore on the east, is a treasure to this county, forming a winding belt of the most valuable intervale nearly its whole distance. The annual floods which overflow these intervales are to you what the rising of the Nile was to the Egyptians. It has been estimated that one pailful of fertilizing mud is found in every one hundred and thirty-two of water in the Nile. If the ancient Greeks could call Egypt the gift of the Nile, in a limited sense we may call Oxford county the gift of the Androscoggin. The sediment which is deposited on these intervales, is in the finest state of division, and abounds in mineral and vegetable matter in a state of complete solution and decomposition. No better preparation could well be made to increase the fertility of a soil than this. While the owner of the upland farm must spread upon his land ashes and lime, and manure in abundance, to secure his crop, and keep up the fertility of the soil, the Androscoggin comes rushing along with its thousand cartloads of manure far better to make a permanent soil than guano or super phosphate of lime, however valuable these may be in particular cases, sifted out, too, not only from the mountain rocks, and primitive forests, but also from the upland farms. Thus the soil is pulverized to a great depth, rendering the labors of the farmer comparatively easy. The chemist will find on analyzing such a soil, that all the necessary elements will be present and nearly in due proportion. He is a miserable man indeed who cannot secure a good living on an intervale farm.

While on a recent visit to the White Mountains, I was forcibly struck with the value of that huge pile of rocks to Maine. Instead of regarding it as a barren waste, I look upon it as an inexhaustible mine of wealth, which does not require to be dug, but which the sunshine and frost, the drouth and the rain, serve in turn to loosen out from the rocks, and hasten onward to the rich intervales of the Saco, Presumpscot, Androscoggin, Connecticut, and other rivers. Its rocks and minerals are of such a nature as to be easily decomposed, and possess the elements of fertility in the highest degree. The apparently useless mosses, that cover its otherwise barren summits, are rich in such material, while the immense forests, which the hand of man can never remove, saturate the innumerable rivulets from its sides with vegetable matter. Palsied be the hand of that man, who would level the mountains at the sources of our rivers. You may possibly exhaust your swamps of muck and other vegetable matter, but those mountains, like the mountains at the source of the Nile, are inexhaustible in their elements of fertility.

The next class comprises your meadows. No one thing has so forcibly struck me in the farming interests of this county, as the almost entire neglect of its meadow lands within its borders. Thousands of acres still exist in this county undisturbed by the hand of man, unless it be by some marauder after a cedar post, when a small outlay would fit the land to pay the interest from one to two hundred dollars an acre. Much of the meadow does not require to be plowed and manured and hoed every year to secure a crop of grass, but when once cleared and drained, it remains for many years essentially the same; and if it be situated so as to be overflowed, it is doubtful whether it ever need to depreciate. A bed of muck, from one to five feet in thickness, when cleared of its stinted growth of wood, and properly drained, with a coating of air-slacked lime or ashes to neutralize the vegetable acids, and the letting in of light and sunshine, will cause heavy crops of grass more valuable than is wont to be estimated by the farmers of this county. Travel through some portions of Kennebec county where they are far ahead of us generally in scientific farming, and you may learn a lesson in the management and profit of your meadows. By a system of drainage, England has reclaimed five millions of acres from her heretofore unproductive swamps.

I trust that I am addressing some here who will go home and examine that mud-hole which is now so disagreeable to the sight, as well as profitless, and see if it cannot be drained at a trifling expense, and rendered productive. No matter if the boys do scold, let them fag at it until it is completely drained. Most persons are deceived in regard to the ease and capability of cultivating our swamps. If they can be drained, they can be cultivated.

The third class is a sandy soil. This is frequently found on the high intervale of the rivers and on the extensive pine plains in different parts of the county. It is usually regarded much inferior to the other classes mentioned, but there is no doubt that such land may be much improved. It should be cultivated early and for early crops. Manure should be well composted and rotted for this purpose. By a frequent rotation of crops, a change of fields into pastures, and pastures into fields, a stirring, active, and sharp-sighted man will often be found thriving on this kind of land. One advantage may be noticed. Such land is almost always situated near a muck swamp, and on no soil is muck of greater value than on this. The nicest quality of potatoes which I ever saw in Maine, was raised on an almost literally barren sand-hill, where muck directly from the swamp had been hauled on the previous autumn.

The fourth class is the upland, rocky soil, which is the most common in this county. The soil on Paris and Bethel Hill may be regarded as a type of this class. The elements of a good soil are abundant, but are coarse, and only in a partially suitable condition for the growth of plants. So far as the mineral elements are concerned, they are essentially the same as on the intervales, but the particles are not divided and sub-divided by water and frost, and other agencies as on these. The scientific farmer may draw a valuable hint from this point, on the importance of thoroughly and deeply pulverizing all the upland soils for the cultivation of our staple crops. Here are raised your fine crops of wheat, corn and fruit. Here you may plow in all the manure, and of every kind, which you can find. In some parts of this county the soil is three or four feet deep, and would bear stirring up to that depth, while in other places it is unfit for the plow, and must be forever devoted to wool and pasturage.

MANURE. No subject pertaining to the farmer's calling is of more vital importance than that of manure. How he shall in the best and cheapest manner accumulate a large quantity, every year, should constantly be before his mind.

I need not remind you, gentlemen, that economy is, and should be the watchword of the thrifty farmer; but under no circumstances, is it better practised than in saving his manures, and by increasing them in quantity and quality in every possible manner. It is idle to talk of purchasing guano and superphosphate of lime, however valuable they may be in some circumstances. The farmer of Oxford county will not in one case in five receive back his money paid out for such manures. The success of the farmer consists chiefly in his being in every sense a *producer*, and not a *consumer*. He must produce, as it were, out of nothing. The leaves of the forest, the muck swamp, the weeds in his garden, refuse straw, solid and liquid excrements of animals,—everything that is good for nothing but manure, should be converted into that substance.

As the farmer becomes more intelligent, he will secure a greater range of manures. In some cases, he will find pure sand just what his land needs. In other cases, clay will satisfy the demand; while under other circumstances deep plowing will be necessary. The intelligent and observing man will find by experience that lime or plaster is wanting. He will learn, too, that though these articles may be valuable they will not answer alone. Lime alone will impoverish any soil, while in combination with other substances it may be exceedingly valuable. The intelligent farmer will look to the air as well as the earth, to heat and cold, to fire and water, as instruments by which to insure the rapid growth of vegetation.

I would here suggest an idea for your future consideration, on the propriety of thoroughly mixing your different kinds of manure. The course adopted by most farmers is to draw out from his largest heap and deposit it in the ground by itself. The hog pen is next visited, and its contents occupy a narrow strip of the corn field. The compost heap, the sink spout, and chip manure, find a location in another direction. The result is this: The hog manure shows a rank piece of corn—rank in the blade, but I believe, not resulting in so good a yield as is usually anticipated. The chip and other poorer qualities of manure will exhibit a dwarfish growth. But the evil does not stop here. The crops of wheat the next year will exhibit the same inequality, and so, also, the subsequent crops of grass. Now would it not be better to arrange matters in such a way as to have a mixture as complete as possible, so that the crops shall appear uniform?

I know of no law in chemistry which would forbid the complete mixture of all the substances usually employed as fertilizers, except that the alkalies, potash, soda, and lime in their caustic state, should not, under ordinary circumstances, be applied to animal manures. As it is said that the stomach will the better digest a vegetable dinner made up of a variety of articles, so will plants also make use of a great variety of elements in their healthy and vigorous growth.

I have no faith in applying plaster alone to a worn out pasture to render it any thing more than temporarily productive; nor do I yet believe that guano or super phosphate of lime will alone keep up the annual fertility of our soils. There is a large amount of vegetable mould in every well conditioned soil. Nature in her cultivation for trees keeps on the surface a large quantity of this substance. I am aware that on many farms such a substance is only a thing of tradition—or, at least, known only by the oldest inhabitant; but rest assured, gentlemen, if, when you have mowed your land the second year, you do not see a thick black coat of vegetable matter on the surface of the soil, that you are exhausting your land, or else it was poor land originally.

I have alluded to this subject of mixtures, hoping that a future conference may bring out your experience, which I apprehend has tested the subject to a certain extent. At all events, make the subject of manure a leading one for your consideration. A skillful farmer of this county assured me the present season, that in order to keep up the fertility of the soil from year to year, it was necessary to double the amount of manure usually made from his stock; and my own experience and observation go to confirm the statement.

The experience of the best farmers goes to prove that on most of the soils in this county, you may apply with advantage great quantities of ashes, lime, plaster, guano, and super phosphate of lime, if you can afford to purchase them, provided you have an abundance of vegetable and animal manures to accompany them.

As I have briefly alluded to guano and other highly concentrated fertilizers, my own impression is, that such manures will do better on old and worn out soils that have been cultivated for centuries, while in our fresher soils, the coarser kinds of manure will be found preferable.

PASTURES. Among the subjects that should engage your attention as a county, is that of improved pasturage. It is obvious to every one that in all the older settled portions of the county, pastures are fast deteriorating in value. A rich pasture is a rare thing. It is a constant cropping, with scarcely any renovation. A poor pasture makes poor milk, and in small quantity, as well as poor meat. How this renovation may best be made, must depend on circumstances. There is no reason why land that can be plowed, should not be cultivated and manured in a rotation from pasture to field, and from field to pasture.

It is just as absurd to expect a good crop of corn without manure, as to attempt to introduce foreign stock into our pastures, unless it be hardier than our natives. As a general thing, nature has not provided us with the most valuable pasturage, but there is no doubt that much might be done to improve it.

AVOID EXTREMES. It is one of the easiest things imaginable for mankind to run into opposite extremes, and the farmer is easily tempted to perform his part in this pursuit. The noble rule that "the golden mean lies betwixt extremes," is almost always a safe one. One man advocates deep plowing. All this may be well, but another starts up and declares that deep plowing must be a great deal deeper than any body can make a plow run in most of the soils in New England that are worth cultivating. Now experience will soon teach any man that a large quantity of fresh earth brought to the surface, unless it can be well pulverized and have an abundance of manure incorporated with it, may prove an injury to the harvest. A gradual deepening of the soil may be found much more beneficial. One inch deeper than ever before, will bring to the surface a large amount of fresh soil, and as much as the atmosphere and vegetation can make use of for a single year.

The subject of draining is brought before the public eye, and when nobody thinks that any thing but moist land should be ditched for that purpose, somebody anxious for notoriety, declares that dry land is benefited as much as wet by the process. Some men think that a great farm is the only way to obtain a living. Others seeing the folly of this, agree for small farms in all cases. Now some men are capable of carrying on a large farm and doing it well, while other men will succeed better on a small one.

Another farmer earnestly advocates the use of green manures, and looks with derision upon his neighbor who makes use of a well composted article. Now, here, gentlemen, both may be right, and both may be wrong. Green manures may be, and no doubt are most valuable when the farmer possesses them in abundance, and can plow them into the soil with reference to his future crops of grass. Crops, too, that are gross feeders, like Indian corn, love the nourishment furnished by such manures in the latter part of the season; but it is a serious question with me, whether all crops in their earliest stages of growth should not have the benefit of well rotted manure. For garden cultivation, we know it to be almost indispensable. I submit it as an open question, whether the farmer who combines one load of green manure with two of muck, and allows it to remain in the heap one year, is not the man who will have not only an abundance of excellent manure, but abundant harvests. I have seen a farmer do so, whose success was remarkable, and as I have pledged myself to report to you what I have seen, I leave it for your careful consideration.

The same caution would prevent the man of judgment from planting a moist piece of land with corn on his green manure. Extremes in all these cases would soon meet. Because one has by chance secured a great crop in either case, it should not deprive him of his independent judgment, nor lead him to work blind folded to all the exigencies of his calling.

This tendency to extremes makes you captivated at sight with monstrous pippins and cat head apples, rohan potatoes, great oats, and Egyptian wheat. Every few years brings about a huge variety of corn which you are tempted to purchase at an exorbitant price. A neighbor accidentally raises a squash weighing an hundred pounds, and the seeds are in demand all over the county with the vain hope of raising like squashes. Some farmer has a cow which furnishes a great yield of butter, and his neighbor becomes uneasy that his cows are not great milkers, and an enormous price is paid for a calf of the famous cow with the expectation of raising one her equal. A new breed of swine is brought forward that will make large hogs and fatten easily. This is a happy combination surely, but the large framed breed will do for the farmer who possesses a large amount of coarse food; while the mechanic, who depends on what he buys to fatten, will find the small breeds the best. Large breeds of cattle come under the same rule. Poor pastures cannot make large cattle. Your rich intervales will support the Durhams and Jerseys. Your poor uplands the Herefords and Devons.

There is yet another form in which the farmer injures himself, especially the man of limited resources. It is well known that the price of many articles fluctuates greatly in the course of a few years. Take wool for example. To-day the price is sixty or seventy cents a pound. The farmer immediately sets about raising a flock of sheep. It takes him several years to accomplish it, but when he is ready to receive his extra profits, wool is dull at twenty-five cents. He fears that it will never be higher, and so sells off his flock at the lowest market price, while his shrewder neighbor commences enlarging his flock, ready to take advantage of the rise in prices.

The farmers all around become excited at the news that hops bring in the market twenty cents a pound. He immediately sets out a hop field. By the time he is ready to receive a good crop, the price has fallen to five cents. He becomes discouraged and tears up his hops roots for something else.

The true course would seem to be, to go steadily along, ready to receive a good price when it comes, and not to be always running after it. A successful ship-builder once informed me that he always kept his business going much the same, whether ships were dull, or quick in the market.

The greatest fault I have to mark against the farmer, is the simple fact, that he does not know how happy he is, or may be, compared with the merchant or professional man of his neighborhood. He does not know how well he lives, or can live, compared with men of the same amount of wealth in other professions. It is rare that when a farmer comes into possession of land, that he need lose it; while he, who procures a shop full of goods, may stand trembling, and dreading the approach of the neighboring sheriff. At the close of harvest, the farmer goes into his cellar, and it is filled with potatoes, apples, and other vegetables, and his barrels full of meat; step into his dairy-room, and, there arranged in order, are rows of cheese and firkins of butter, the housewife's pride. Pass into the granary, and there are the heaps of corn and grain, looking as if the owner was in the wholesale trade. Go on further to the barn, and it is filled with hay and stock. This scene is not exhibited once in a lifetime, but it is repeated, and may be witnessed every year.

There is something ennobling to the mind of the man who has a title to a piece of land,—a title not received from his fellow-man, but as it were from Heaven itself. He at once feels conscious that the spot of land around him is his own. No feudal lord ever felt safer than he, as he surveys his fields.

Whenever I meet with a really intelligent farmer, who loves his calling, loves his family, his neighbor, his country, and his God—a man who is surrounded with the comforts of life, and really enjoys them in the highest development of his social, intellectual and spiritual natures, I feel as though I was surveying the man who was best fitted of any one on earth to go back to that Eden of other days. Put him on a throne, would he be happier than now? Set him in Victoria's chair of state, which, perhaps, is as easy and safe as any in the world, is it easier than his own? Is her sense of taste any keener than his? Does the air smell any more agreeably to her than to him? He can sleep with unbolted doors if he choose, and be safe, but can she do the same? She, no doubt, loves her children, but is her love dearer than his? Does the parental kiss taste more sweetly by being granted from a queenly parent, than from a tiller of the soil? Can she put implicit confidence in friends like him?

Did such a man fully realize the troubles and dangers that beset a throne, he would reject the offer of one with indignation, and prefer, like the Father of his Country, to go to his farm, and spend the years allotted him in the full enjoyment of retirement.

The Farmer, Nature's Nobility. Much has been said and written respecting a farmer's occupation, as though it were really a very low calling, and required special effort to relieve it from that imputation. But, gentlemen, it is a low calling to him who *will make it so.* The man who is determined to be a merchant, may go into one of our large cities, traverse the streets and ditches, and pick up the bits of rags and paper and sell them, and be a *merchant,* but his calling, though honest, will be a very low one. So may a farmer be a mean man, an ignorant man, a selfish man, without any signs of improvement about his farm, his buildings, his family, or himself. He *makes* his calling a low one. Did such a man live under a despotic form of government his situation might be excusable. A farmer may commence the world with nothing but his hands as a patrimony, yet he can, if he will, show evidence of improvement. Did George Washington feel his calling to be a low one when superintending his broad acres around Mt. Vernon? Do you hear such language from the judges, statesmen, presidents, kings, and emperors, who have in different ages watched with delight the growing crops and the trees planted by their care.

No, gentlemen, farming is honorable, just as you make it so. If you seek for improved modes of cultivation, if your eye is quick to detect the advantages of a new implement or machine, if you strive to make home comfortable, convenient, tasteful, but not extravagant, read a good agricultural paper, and other works on the same, and kindred subjects, learn to be a thinking as well as a working man, you are rendering your calling an honorable one. If you are blessed with a good wife, though I hardly need say this, for the wives of Oxford county are all good, you can set a better table than your lawyer, minister, merchant or doctor. Give your children a substantial English education, so that, whatever may be their calling they will not suffer for the want of it. Lay aside the narrow prejudices of narrow minds, and look at your neighbor and your fellow man with expansive feelings of good will and benevolence, and feel that you are not alone in the world, but members of one great brotherhood. In this way you will honor your calling as farmers, and sustain the character of noble men.

PROGRESS, THE FARMER'S WATCHWORD. The mind of man is expanding in every direction. The human pulse beats quicker than ever before. Every department of human industry is full of life. Never did the miner delve so far into the bowels of the earth for its treasures as at the present day. The mysterious depths of the ocean have been sounded, and its bottom mapped off as the land. The hardy sailor penetrates the frozen seas of the north, and gives battle to the monsters of the deep, whose bodies furnish us with light by which night is turned into day. The winds have been tracked in their apparently fickle course, so as to shorten the voyage of the mariner. The lightning has been seized upon to convey with lightning speed messages of joy and sorrow, war and peace, from one portion of the world to another. With the microscope he has arrived almost to the elements themselves. With the telescope he penetrates further than ever into the regions of space, names and numbers the stars, and discovers new worlds to add to the company of our own. But I must tell you that science has accomplished these things. Shall the farmer alone, of all occupations, fail to advance in a knowledge of his calling. Be sure, that, unless he keeps pace with all the expansion of the human mind, he will sink down to the degradation which every where marks the condition of the ignorant peasantry of other lands.

The astronomer, with his instrument composed of the same material which the farmer employs in the cultivation of his soil, directs his sight, and his mind, and his imagination from star to star along the luminous way to the very walls of heaven, until imagination itself is lost in infinitude. Perchance his eye meets for the first time with the light of some star, which, since the creation, has been shooting along its penciled rays to add to the infinity of worlds already within scope of his astonished vision. Grandeur and sublimity are words too faint to express his emotions. But the astronomer is limited to a comparatively few subjects, and these beyond his reach. With his most powerful instrument directed to the moon, his nearest neighbor, his knowledge is mostly negative in its results.

Turn now to the farmer—the intelligent, thinking, progressive farmer. To him the very materials which compose the astronomer's telescope, are subjects for as profound contemplation as the human mind is capable of investigating. To him all nature is open. Geology, with its wonders, unfolds its pages at every step. Botany in its never ending variety invites him. Chemistry and physiology with their mysteries are ready to assist him. Everything in his calling challenges investigation. He cannot set a post, or plant a hill of corn, without having the inquiry start up before him whether there be not some better mode. A man without this spirit of progress never changes his course. The intelligent man will always be changing for the better. The astronomer may become great in one particular direction. He may be a martyr to science, and the world be better for the sacrifice; but it will be at the risk of strong eccentricities of mind which will unfit him to be the good father, neighbor and citizen.

Give the farmer the same amount of capital which is necessary for the investigation of the astronomer, and he becomes really the greater man in his better developed body, and better balanced mind. I make these seemingly broad assertions because I believe the farmer's calling is in better keeping with the original design of his Creator. Nature is systematic and harmonious in all her operations, and man must come under the same great law in his fullest development.

Gentlemen, do not suffer yourselves to be deceived in this matter. Real improvements are usually slow. It was just two hundred years ago that the idea of a steam engine was conceived, but it was not until our own day that it became the instrument which we now behold, wielding a power that no man or combination of men can arrest. The printing press was put in operation more than four hundred years ago, yet it was not till our day that it arrived to that degree of perfection by which every man, however poor, can be supplied with all the current news of the day at a trifling expense.

I need scarcely point out to you the improvements of the last twenty-five years in agriculture itself, and he is a sorry farmer, indeed, who lags a great way behind. Give, then, I repeat, your sons and your daughters a good education. Do not cheat them by holding out the idea, that, if they know as much as their fathers and mothers, it is sufficient; but rather let them feel that they are a generation with privileges far greater than their fathers enjoyed. Let them seize on the improvements of the day, and be imbued with the spirit of progress, and you may have no fears in leaving them behind you to enjoy whatever you may bequeath to them.

A HINT TO YOUNG MEN. But, Mr. President, there is a portion of this audience to which I wish to address a few words. It is the farmer's sons. Probably not one of the young men reared in this county, intends to be a farmer. The shoemaker's shop, the factory, the railroad, the counting-room, offer to young men greater inducements than the best farms in the land. Now far be it from me to wish that all young men should be farmers. But in making a choice between a farm and any mechanical employment, young men are too often dazzled by a little money that can be earned after a few weeks of service in some other employment.

Let us see the result. A mechanic learns a trade, settles down in life, secures a house lot, builds a house and a little stable, keeps a cow and a pig, and lives, to use a very common expression, from hand to mouth. He works early and late, is constantly the servant of the public, or of an employer, and has a reputation constantly at stake. He is honest, respected, and useful in society. He is now forty-five years of age.

How is it with the prospects of the young farmer. He secures a few hundred dollars by his industry, purchases a farm, and is enabled to have his own garden, orchard, pasture, field, and wood-lot. He lays his plans for life. At the age of forty-five he has a farm free from debt, with an amount of property worth double and treble that of his neighbor, the mechanic. A good farm will pay for itself at almost any price. Instead of being compelled to wait upon customers late at night, he enjoys the company of his family, reads his weekly papers, and retires undisturbed by the vexations that beset the mechanic, merchant, and professional man. He rises early, and remembers the couplet of Poor Richard,

> "Plow deep while sluggards sleep,
> And you will have corn to sell and to keep."

Have I not drawn a faithful picture? If so, would it not be well, young men, to have a little regard to the kind admonitions of a father before making the important decision? Almost every man, as he advances in years, turns back to his youth as the happy period of life, and if his early days were spent on the farm, he will sigh for the time when he may leave the counting-room, or shop, and go back to spend the remainder of his days on some land which he can call his own.

While visiting the store of a wholesale merchant in the metropolis of our State, a year or two since, I was invited by the owner to take a ride and see his little farm out of town. He was constantly calling my attention to his highly cultivated field of three or four acres. Not a word is uttered about that store with its well-filled shelves of goods. That bit of land was all his theme. Now his case was only the spontaneous out-breaking of man's very nature.

A man *with* capital can be an independent farmer, and as sure as there is a fulfillment of the promise, that there shall be seed time and harvest, the young farmer *without* can become an independent man.

WEST OXFORD AGRICULTURAL SOCIETY.

Amount of Premiums awarded at their Show and Fair October 16th, 1856.

On domestic and fancy articles,	$19 60
horticultural products,	5 50
horses,	26 00
sheep and swine,	13 00
bulls, steers and heifers,	19 00
wheat, corn, rye and beans,	16 00
peas, oats, potatoes, &c.,	9 00
town teams,	18 00
working oxen,	14 00
cows and calves,	8 00
butter and cheese,	7 00
cloth,	7 00
carriages,	6 50
boots, shoes, leather and harnesses,	6 00
plowing,	19 00
ladies' horsemanship,	10 00
Miscellaneous,	9 92
	$161 42

From the Report on Plowing.

The object of plowing, is to prepare the ground for the reception of the seed, and every judicious and intelligent tiller of the soil is well aware that the young and tender fibre requires sustenance which it can readily take in, and such as is best adapted to its growth. The benefit of deep plowing is not fully understood, and many are slow to try the experiment. Soil, properly manured and thoroughly pulverized to the depth of ten inches, is better calculated to resist the withering blight of drouth than six inches. Many plead the want of manure as one objection to deep plowing. Manage your corn field as you manage your garden. Manure high, plow deep, pulverize fine, and you produce heavy crops of corn, grain and grass. Cut your garment according to the cloth—or in other words, manure according to the quantity in your pile. Is your land dry? A deep, well pulverized soil, allows the roots to hide themselves from the drouth. Is it wet? A deep, well laid up furrow, allows the superabundance of water to sink below their reach. It is under draining on a small scale.

The specimens of plowing examined by your committee were very good, but "deeper" is the watchword. Your committee would suggest the propriety of establishing a minimum depth, inasmuch as so many different opinions prevail as to the proper depth.

The skill displayed in managing the teams, is a distinguishing characteristic of a Yankee farmer, which has much to do with the proper execution of his work. Your committee did not take the time into account at all, being convinced that forty minutes is a sufficient short time in which to do justice to one-eighth of an acre.

J. S. Powers, *Chairman.*

Gleanings from Statements.

Frank Wardsworth of Hiram, entered for premium on crop of Malaga wheat, forty and a half bushels on one three-fourth acres of light, yellow loam, twelve to eighteen inches deep, on a hard, gravelly subsoil; lightly manured last year and planted to corn; a bushel and three quarts wheat sown broadcast to acre May 24th; soaked in brine and rolled in lime; harvested August 12th quite ripe; no manure applied the present year; expenses not given; value of wheat $2.50 per bushel.

William Pierce of Hiram, also applied for premium on eighteen or twenty bushels white bald wheat, grown on one acre of dark colored loamy soil, on gravelly subsoil; planted to corn last year; cultivation not high; sowed in April, harvested in August.

James Walker of Fryeburg, entered for premium on corn, one hundred and two bushels sound, six of soft, and a cart load of pumpkins, on an acre. Statement as made to State Society, (See page 39.)

Joseph G. Swan raised ninety-two and a half bushels twelve rowed corn, and eight bushels beans, on an acre of yellow, loamy land; planted to potatoes the previous year; this year applied eight and one-third cords stable manure worth $25; rows and hills three and a half feet asunder; beans planted between corn; planted May 17th, beans after the corn was up; plastered before hoeing, cost fifty cents; thinks it cheaper to cut at roots, and better to cut the tops.

Expenses; manure,	$25 00	
Plowing,	2 00	
Harrowing,	1 00	
Planting with corn planter,	1 00	
Hoeing,	10 00	
Harvesting,	12 00	
Plaster,	50	
	$51 50	And the crop worth $116

Mr. Abraham Lord's statement on corn. This land was mowed for a number of years, and then it was pastured until 1855; in 1854 I pulled out pine stumps enough to make thirty rods of fence, then in 1855 I hauled on eighteen cords of long manure, and spread it on to the grass ground; then plowed nine inches deep; then harrowed and planted it with corn. This is merely a simple statement of the condition the land was in for the present year, 1856. I hauled on to the acre and a half nine cords of long manure, spread and plowed it eight inches deep; then harrowed and furrowed it; then put into the hills about three cords of compost manure made of muck and hog droppings. The rows were three and a half feet apart, and the hills three. It took about nine quarts of the large twelve rowed corn like the sample of the crop herewith presented. I finished planting it the 29th day of May. It was neither rolled nor soaked in any substance whatever. About the 10th of June I planted forty rows of white beans beside the hills of corn. It was hoed about the 20th of June, and then again the first of July. This is all the after cultivation it has received. The soil on which this corn grew is of a yellow, gravelly loam, and when dried under the action of the sun, it is light and friable; it is from eighteen inches to two feet deep to the subsoil or base, which is white, hard and gravelly, through which water does not pass. The rocks found on it are granite, a mixture of large and small ones. The top stalks were cut the 10th of August, just after the corn began to turn yellow. The amount of corn raised on this acre and a half of land was two hundred and thirty-two baskets full; one basketful shelled out made twenty quarts of corn; it weighed thirty-four pounds; the weight of the stalks was forty-eight hundred.

ABRAHAM LORD.

Expenses: 1 man and yoke oxen 2 days plowing. ½ day harrowing—2 men and 1 yoke oxen furrowing and dunging. 1 man 2 days planting. 2 men 6 days hoeing it twice. 2 men 2 days cutting stalks and binding and housing. 2 men six days harvesting.

FRYEBURG, Oct. 14, 1856.

I, Franklin S. Hobbs, hereby certify, that I have raised the present year three hundred and seventy-five bushel baskets full of good sound Indian corn; and I have shelled said basket full of ears, and it made over one-half bushel, making therefore one hundred eighty-seven and a half bushels of shelled corn. The ground has been measured by James Hobbs, Jr., and he certifies that there is two and one-fourth acres—averaging eighty-three and one-third bushels to the acre.

Statement of the manner of raising, and expense of the above corn. The ground was common upland, rocky, and rather hard land, but of a strong, coarse soil; about half of the piece was planted last year with corn, on a green sward, well manured; that part, this year, was manured in the hill with fine yard and hog manure, being about a common shovel-full in a hill; the other half was green sward, plowed this spring, and about twenty cords of strong barn manure spread on to the furrows and well harrowed in; it was planted about three and a half one way, and two and a half the other, not over four kernels in a hill; well hoed twice.

Cost: To plow it about 12 days,	$12 00
To get on the manure and harrowing,	10 00
Planting—6 days work,	6 00
To hoe it cost not far from sixteen days' work,	16 00
To cut and shell, 6 days,	6 00
To husk it, 10 days,	10 00
Total expense,	$60 00

Franklin S. Hobbs.

Statement of Joseph G. Swan, Denmark. The soil where I raised my corn is gravelly loam; it was plowed in the fall of 1854; in the spring of 1855 spread on three cords of strawey manure, plowed it in, and planted with potatoes; after digging potatoes plowed again, in the spring of 1856 spread on eight and one-third cords of stable manure, plowed it in, and planted with corn the 17th of May; after the corn got up, planted beans with the corn between hills; corn planted three and a half feet apart, four and five kernels in a hill.

One acre of land,	Dr.	Land,	Cr.
To 8⅓ cords manure,	$25 00	By 8 bushels beans,	$16 00
Plowing,	2 00	Corn fodder,	10 00
Harrowing,	1 00	Manure left in ground,	12 50
Planting corn and beans with corn planter,	1 00	5 bushels corn at half price,	2 50
Plaster, 1½ bushel,	50		
Hoeing three times,	10 00		41 00
Harvesting corn and beans,	12 00	87½ bushels good corn,	87 50
Interest and taxes,	4 00		$128 50
	55 50		
Deduct credits other than corn,	41 00		
	$14 50		

You will see that if I have made no mistake, 87½ bushels of corn cost me $14.50.

Statement of James Guptill on potatoes. I raised two hundred bushels of potatoes from one acre of ground. The manner of operation: In the fall, I plowed one acre of grass ground; in the spring, harrowed it, and then cross plowed it; then harrowed, and again furrowed it three and a half feet apart, six inches deep; and then I chained it the same distance; manured it in the hill, one-half with long manure; and then I plastered the whole, dropping the plaster on the manure; and I got more potatoes where I did not manure. A true statement of the above operation.

JAMES GUPTILL.

J. O. Fessenden of Brownfield, raised fifty bushels of oats on an acre of intervale; sandy and loamy soil. Statement and certificate give no particulars as to cultivation or cost.

Also, ninety-two bushels "Pink Eye" potatoes on a half acre of sandy loam, which had been in grass five years previous; four cords long manure applied; plowed in fall, harrowed next spring; cross-cut and harrowed again; furrowed and plastered three and a half feet apart each way; added plaster and ashes in hill.

James Walker of Fryeburg, showed grade Devon bull which he esteems for hardihood and docility. A boar, half Suffolk, which breed he "regards as superior on account of their docility and quietness, thrift and readiness or natural inclination to take on fat." Also, twenty sheep, a cross of Saxony and Leicester, which he "esteems for the grade of and size of sheep," easily "kept on meadow hay in winter and meadow pasture in summer."

Mrs. S. Stickney of Brownfield, exhibited bread made of home grown wheat, as follows:

Six quarts of flour, one quart new milk, half cup of yeast, put into the middle of the flour; stir a little, then cover the batter with dry flour; let it stand till it rises, then add milk sufficient to mould, and one tea spoonful salæratus; then put into tins and set a short time, and bake three-fourths of an hour.

BROWN BREAD. Four parts rye, three parts Indian, and half as much mixing as meal before it was sifted; a little salæratus, and a little molasses; bake twelve hours in a brick oven. The materials the product of our own farm.

Mary P. Wentworth of Brownfield, showed bread made as follows:

Oven Bread. Three quarts corn meal, two quarts rye meal, two and a half quarts sweet milk, blood warm; one cupful of molasses, one tea spoonful salt, three table spoonfuls of yeast; let it stand until it begins to rise, then heat the oven. The above is enough for two small loaves.

Steam Bread. Five cups sweet milk, two pints corn meal, one pint wheat flour, one-half cup molasses, small table spoon two-thirds full of salæratus, a little salt, boil six hours.

Mrs. Z. Gibson says of the brown bread she exhibited:

"The brown bread I offer for the Society's premium (as near as I could judge) was made of one part rye, and two of Indian meal, mixed with sweet milk, and a little salæratus, baked in a brick oven."

LINCOLN CO. AG. AND HORT. SOCIETY.

This Society held its fourth Annual Show and Fair at Thomaston, on the 1st, 2d and 3d days of October, 1856.

The exhibition seems to have been a fine one and highly satisfactory, the animals and articles presented, being in very considerable numbers, (one town team consisting of thirty-three yokes of fine oxen,) and also of choice quality. There were awarded in premiums:

On neat stock,	$45 00
horses,	25 00
dairy products,	25 00
grains and vegetables,	38 00
fruits,	16 00
sheep and swine,	13 00
manufactures and miscellaneous,	94 00
	$256 00

Besides gratuities and books?

The Secretary, Dr. B. F. Buxton, of Warren, writes as follows:—"The Society is in a prosperous condition, and the interest in it, is increasing in Lincoln county, and the exhibition of cattle, fruit and dairy products shows conclusively that our farmers and orchardists are giving much more attention to their business, working to better advantage, and in many instances instituting a series of useful experiments, and carefully noticing the results. The influence of the Society has been to call attention particularly to manures and *sub-draining*. We may reasonably expect, that in a very few years, under a well regulated system on the part of the State, valuable statistics may be obtained. The present form of returns being entirely new, many farmers and even mechanics, are unprepared to answer the questions, but should the present form be continued without much change, people generally would soon understand what was required and be better prepared to fulfill such requirements."

Scraps gathered from Statements.

LIVE STOCK.

Charles Crockett presented a cow five years old, for premium. She is Grade Durham. He prefers the Durham on account of their large size when kept well. This cow was raised by himself and never sucked her dam. He fed her on sour milk with some Indian meal. In the winter, gave her carrots, with hay. She is both a good breeder and a good milker. He thinks she will average about sixteen quarts of milk per day for the last year. Was dry only two weeks in that time. Averages about twenty-four quarts per day in June and July. In the winter he feeds her on hay, carrots and slops from the house.

Peter Fuller obtained premium for best family horse. Breed not known. His age nine years, bred in Kennebec county. He is a family horse, very kind, easily managed, easily kept, and perfectly safe. He prefers chopped feed and roots as feed for horses.

DAIRY PRODUCTS.

Thomas Simmons, Waldoborough, has a dairy of four cows. He "prefers a cross between the Ayrshire and Native as the best stock for cows; keeps them on hay till within fifteen or twenty days of their calving, when he gives them roots and meal. Highland pasture he considers the best for dairy purposes. Churns the cream the same day it is taken from the milk; is careful to extract all the butter milk, and salts it with one and one-half pounds of good rock salt to twenty-five pounds of butter, three-fourths of a pound of fine loaf sugar, and one ounce of saltpetre. After this, lets it stand twenty-four hours, and then works it over again and puts it down in balls."

Sumner Leach of Warren, has a dairy of five cows, of the common native breed, which he keeps on hay in the winter, with meal at and near calving time. He regards a pasture abounding in white clover or honey suckle as the best to make cows yield milk. Sets the milk in a cellar milk room, and skims the second or third day as the case may be. The butter milk is removed by washing and working. In seasoning butter he uses salt alone. His cows yield from seven to eight pounds each, per week. In making cheese, he makes a curd at every milking and unites two curds in one cheese. Press two days at least, sometimes three. When taken from the press, sew a bandage loosely around it, to prevent its spreading. Turn and grease, daily. Makes about two pounds of cheese per cow per day.

FRUITS.

John Andrews presented a specimen of what he calls winter Greenings, from trees twenty-five to thirty years of age, grafted on native apple stocks, near the ground, in the nursery. Soil "from one to two feet deep, high, sandy and gravelly. My orchard consists of one hundred and fifty trees. I cultivate once in two or three years; keep the roots free from weeds; use chip dirt and lime, and carefully pick all wormy apples from the orchard. In the winter I keep the apples in flour barrels; those for sale in a shed, and those for winter are all put directly into a cool part of the cellar."

John Currier presented for premium an assortment of apples, pears, plums and grapes. Of apples, he had above fifty varieties. The apples were grown on trees from fifteen to twenty years of age. The others are about ten years old. The apples and plums were grafted on seedling free stocks, and the pears on Auger's quince and mountain ash. The quince stocks were grafted at the ground and the mountain ash in the tops, as they answer no purpose when grafted at the ground. The soil is a loam, from twelve to fifteen inches deep, with some gravel, underlaid by a ledge. The soil near the trees has been kept light, moist and free from grass, by hoeing and mulching.

The little borers *killed off* before they are large enough to do mischief; the tops kept open by reasonable pruning, for the free admission of light and air. When it has become necessary to remove a large branch, means have been first used to direct the sap from such branches to other parts of the tree, and then it has been taken off in the month of June or July, the part removed having but little foliage at the time. He uses stable manure composted with muck, in sufficient quantities to keep the trees in a thriving condition, as the principal dressing.

Thomas Simmons presented twelve varieties of apples grown on trees from fifteen to twenty-five years old; grafted in the tops of seedling stocks. The soil on which they grew is a deep, rocky loam. He scrapes his trees, and washes them with strong soap suds or lye, removes all decayed limbs, and covers the wounds with wax. He manures with a compost made of barn-yard manure, swamp muck, ashes, lime and bones, and applies from one to two bushels to a tree.

CROPS.

Thomas Simmons entered for premium on a field of barley. The soil was partly sandy and partly a clayey loam. When dried under the action of the sun, it is light and friable, and is of a dark yellow color, underlaid with a hard, gravelly subsoil. The stones on it are mostly granite, of which there are a plenty. The year before it was planted to corn and manured in the hill, and produced ninety bushels to the acre. Plowed about ten inches deep, cross plowed and harrowed, and applied no manure the present year. Sowed the first of May with two rowed barley, broadcast. The seed was soaked and rolled in lime. Harvested the first of August. Produce, twenty-six bushels, weighing fifty pounds to the bushel.

Lewis Vaughan planted half an acre of corn on a sandy loam, which is about fifteen inches deep, dark in color, and light and friable. The stones are of various kinds. It has been in grass for a number of years, and was plowed about ten inches deep, in the fall. In the spring before harrowing he applied ten loads of green manure; also ten loads of old manure in the hill; planted about the fifteenth of May. The rows were three feet and one-half, and the hills three feet apart; hoed and cultivated twice; the top stalks were cut off about the first of September, and it was harvested about the last of this month. Produce, ninety-six bushels of ears of corn.

David Starrett had his soil analyzed by Dr. Jackson, but does not state its chemical composition. It is a sandy loam, light and friable, and about one foot deep, reddish color, with a clay subsoil. The rocks are limestone, and but few stones. Last year a crop of wheat was taken from the piece, and this year planted to corn, on which he asked a premium. The land was plowed about eight inches, manured with barn yard manure and plaster, at the rate of about eight cords to one-half acre; planted from the fifteenth to the twentieth of May. The seed was soaked in saltpetre, and planted in hills three and one-half feet each way; cultivated and hoed twice; it was very weedy; harvested the last of September. Cut the stalks when full in the milk. Produce, one hundred and eighty bushels of ears of corn to the acre, weighing 1,080 pounds; stalks about 1,500 pounds; cost about $20 and is worth $81, beside the stalks, which are worth fifteen dollars. "I consider corn a sure and profitable crop."

AN ADDRESS

Delivered before the Lincoln Agricultural and Horticultural Society, in Thomaston, October 2, 1856, by B. F. Buxton, M. D.

Mr. President, and Gentlemen of the
Lincoln Agricultural and Horticultural Society:

It was with no small degree of reluctance that I accepted the invitation of your Trustees to address you upon this occasion. Supposing myself to have been called upon professionally, to examine the nature of the disease with which agriculture in the county of Lincoln seems to have been long laboring, I doubted my ability to diagnose, properly, the disease, and prescribe a remedy; but, having engaged, I examined its anatomical structure, and found that the great skeleton, or stony foundation, was of primitive formation, and at once concluded that it was well able to sustain the soft parts, composed of almost every variety of soil; while the great circulating system, the veins and arteries, in the form of small streams from the mountains, the brooks meandering through the meadows, and the rivers finding their way to the ocean—the great centre or heart—was abundantly able to support and render fit for use those parts; nor was there any want in the nervous system; there is an abundance of power in moneyed capital to send an electric shock through the whole structure.

From these considerations, I came to the conclusion that there was really no organic disease, but merely a functional derangement, showing itself in different forms under different circumstances. The causes of this derangement are various; sometimes arising from speculating mania, at others from extended manufacturing and trading, and occasionally, from excessive emigration; but the most serious obstacle to the full and perfect development of agriculture, may be traced to a general dislike for labor.

No country can become truly great, virtuous, and rich, which produces the necessaries of life with little or no labor. Labor is a condition of prosperity and happiness, and the physical development which it necessarily produces, is sure to increase mental activity. Where there is no want, there will be no laboring class, no progress, no improvement. Where there is no necessity for industry, where the growth of the necessaries of life is spontaneous, where to-day is relieved from all care for to-morrow, there, of course, will be indolence, and imbecility, with all the family of vices of which they are the legitimate parents. Man is naturally *lazy*, and is only stimulated to action by necessity, in order to procure the necessaries of life, or to indulge his appetite, gratify his pride, ambition and love of power. When it was pronounced upon man that he should "procure his bread by the sweat of his brow," it was not a curse, but a blessing, intended as a necessary and all important stimulus to action; a condition absolutely necessary, to prevent the physical degeneration and mental imbecility that would necessarily follow a life of indolence and inactivity.

There is no pursuit of life, viewed either as a source of individual profit and independence, of national wealth and strength, or of universal enjoyment, that can equal that of agriculture. The merchant may increase his stores and riches, may surround his home and estates with luxuries; the mariner may visit foreign lands, may gather the products of every clime, may exchange the growth of one country for that of another, get in return for the solid waters of the frigid zone the delicious and melting fruits of the tropics; the antiquarian may decipher the history of past ages, and become familiar with the hieroglyphics of the ancients; or the astronomer may discover new planets, point out their direction, and accurately measure the time of their revolution; but these advantages and pleasures are enjoyed by but few, compared with the whole mass, while the result of agricultural labor is, to a great extent, the common property of all. While none are so rich as not to require the products of this labor, there are none so poor but they can honestly appropriate to their own use, much of the hard earned rewards of the husbandman without money and without price.

View the scenery in a well cultivated farming district in the growing season, when the clouds, rain and sun are shedding their genial influence, when hill and vale are decked in green, when the groves are covered with rich foliage, and filled with birds and animals, when the fields, clothed with rich fruits and flowers, are lending their aid for our enjoyment.

Can money purchase pleasures like these? No, they are not articles of trade, not to be purchased, even with the hoarded treasure of the miser, but to be equally enjoyed by all with rightly attuned hearts and properly cultivated natures; all such may enjoy them. So far as beauty of scenery, so far as the display of nature, aided and assisted by art, each lover of the beautiful works of creation has an equal, an undoubted title. The proprietors can produce their deeds, to be sure; the occupant can point to his inclosures, show you his butts and bounds, but what, I would ask, is their exclusive possession? What do their long parchment deeds with signatures and seals prove? What exclusive possession do their ditches and line fences establish? The privilege of plowing, hoeing, digging, planting, sowing and harvesting.

The owner may have the fruits of his labor, for he is entitled to them, they are his, and the law of his country guarantees his peaceable and quiet possession of them, but he alone is not permitted to enjoy the rich and ever varying landscape, improved by his toil and care. He cannot, in his selfishness, hold the entire right of enjoying the rich effect of sunshine and shade, as they chase each other across his outstretched fields. It is not alone for him that the first vegetation of spring changes the forest and the fields, clothing them with rich verdure. He cannot alone breathe the highly perfumed air as it passes over the flowering acres of his vast possessions. Not to the landholder alone belongs the beauty of the tall grain, waving its golden heads in the gentle breeze;—nor to the miserly orchardist, the perfumes arising from his blushing and ripening fruits.

The rich beauties of the Indian summer, and the ever varying changes of the New England forest at an early frost, are equally the property of every one possessing a soul capable of appreciating such a picture as only the Almighty can pencil.

The advantages of agriculture being so universal, furnishing directly the necessaries of life to all, being the source of individual and national wealth, it has received special encouragement from every good government since the earliest formation of society. If time would permit, it would be interesting to trace its progress through sacred and profane history, from its earliest operations to the present time, to carefully examine the various laws that were established by the ancients for its encouragement, to compare the situation of the people of past ages who were engaged in cultivating the soil with those who were engaged in conducting long and bloody wars, to trace the improvements that have been made in farming implements from the time of the primitive plow made of a single root, to the state of perfection displayed in the stock of tools of a thorough farmer at the present day. Such an examination would be interesting and instructive, by it we should see the troubles and difficulties of the early cultivators for want of proper implements for farming purposes. They were almost ignorant of the productive powers of the earth; had little or no knowledge of geology or chemistry; were constantly exposed to the devastating influence of long and bloody wars, destroying their products and rendering their lands of little or no value.

History shows that there has been a constant improvement in the condition of the agriculturist, in every civilized nation of the earth.

Laws have been constantly established for their protection, and special encouragement given to their various pursuits. The inventive talent of the mechanic has been successfully engaged in the improvement and addition of farming tools. Men of science have devoted themselves to the study of vegetable anatomy and physiology, enabling them to show what nourishment is required to support the growth of the various plants and fruits, and what fertilizers are required to restore barren and exhausted lands; placing within the reach of every practical farmer, certain sure and correct principles upon which the success of his operations depends.

The progress of agriculture has been very seriously retarded in this State on account of the extensive emigration of the young men. And much has been written and said upon the subject, and many plans devised to check it, but with little success. The advantages and disadvantages of the different States have been so often pointed out, that it would be useless to repeat them at length on this occasion. We have had graphic descriptions of the sunny south, with its broad savannas and rich bottom lands, with almost spontaneous growth of all vegetable matter; but in offset we have been reminded of the deleterious miasma, spreading sickness and death broadcast over its limits. The almost boundless west has been minutely described, detailing with care its extensive rolling prairies, vast forests, and productive soil, but we are reminded that it is populated with a "bilious tinged," cadaverous looking race, constantly shaking with ague and fever, causing listlessness, physical and mental inactivity, premature old age, and death. Our own New England States too, have been pictured, with all the beauty of their varied scenery, with their proud rivers and vast waterfalls, lofty mountains, fine forests of valuable timber, productive soil and ready markets, affording to the farmer every facility for the sale and exchange of his produce; but here, too, we find a difficulty and objection as a farming region, in the early frost, long, tedious, frozen winters, and cold, backward springs.

By a careful examination it will be seen that every State in this widely extended Republic, reaching from the Atlantic to the Pacific, and embracing within its extensive limits almost every variety of climate found in the frigid and torrid zones, has some peculiar qualities and advantages not possessed by another. They are, therefore, peculiarly adapted to the various classes of people who inhabit them, congregated from almost every country in the known world. Does a person desire to live at ease, with but little or no labor, he has but to build him a hut at the extreme south, live upon the spontaneous growth of the country, submit to the debilitating influence of the climate, wear down the irritability of his disposition by a constant warfare with musquitoes and kindred insects, and he will soon find himself in the enjoyment of a very low grade of animal existence.

Should he prefer a different situation from this, and be willing to work hard for the necessaries of life, dispense with all the luxuries, substitute the slavery of ague and fever for that of fashion, he can settle on a vast tract of land at the west, reap the rewards of his labor in rich crops of wheat, oats and corn, and increase his stock of cattle and hogs; he may become rich in lands and stocks, but he must submit to poor health and to the want of facilities for education.

If a man is willing to work hard, live prudently, increase in wealth slowly but surely, and indulge to a reasonable extent in all the great commercial, manufacturing and political movements of the times, let him become "a New England farmer," and run through the different grades of that extensive, and really important class of citizens. Here I should like to trace the progress of one of our successful farmers through his whole career as worker of the land, proprietor, employer, trader, town officer, justice of the peace, legislator, member of congress, and minister, but for want of time must leave this matter for you to picture for yourselves, and return to the subject of emigration, as I wish to call your attention to the present system of internal improvements, this system of telegraphs and railroads, as a direct means of checking the disastrous drain upon our community. Look for a moment to the facilities for conveyance of information and travel, as it existed but a quarter of a century since, and at the present time! Who of us but remembers when it took about a month to transmit a letter from Maine to Louisiana? How well do our business men remember the uncertainty, and irregularity in regard to their business correspondence. Equally tedious and uncertain was travel by public conveyance, while the expense and loss of time were such as to prevent the mass of our population from profiting by, or indulging in travel by private conveyance. Many of you must well remember the preparation for the journey, and the departure of those who emigrated to Ohio about the year 1817, from this vicinity. When your neighbors closed their business here, sold their farms, shops, furniture, and fixings, furnished their red wagons with cotton coverings, attended church upon the Sabbath for the last time, mingled their tears with those of their friends, gathered their families, bade a last adieu, and with their long train of wagons moved off on what seemed an almost endless journey. At that time the distance seemed so great, and the troubles so nearly insurmountable, that well might friends shed tears at parting, and look upon those to whom they had been long and dearly attached, as about being separated never again to meet. How anxiously, after long months of absence, was every irregular mail watched, with the expectation of the promised letter detailing the adventures of the tedious journey! In very many instances not only months but years passed before any intelligence could be obtained from absent friends, and when the long looked for letter came, very different was the account given, from the expectations before their departure.

How different the situation of the country now! Every State in the Union is connected with its sister State by the iron arm of the railroad, transporting news from one extreme to another of this vast republic in a few days, making neighbors of those whose residences are thousands of miles asunder, and affording opportunity for exchanging the products of one section of the country for those of another, without waste, deterioration, or loss of time, furnishing means of supplying the vast interior with the fish of the Atlantic, fresh and in a perfect state of preservation, carrying the same article to the extreme south, enveloped in the pure ice of our northern lakes, and bringing in return their rich vegetable productions almost in the freshness of their gathering.

Almost every town is so far under the electric or nervous influence of the telegraph, that the least event in any village may be almost instantly felt through this great nation, producing its effect through the almost boundless ramifications of this ganglionic, iron, nervous system, carrying our will on its superficial structure through the great organized body of the United States from the Pacific to the Atlantic, where it is about hiding itself in the deep waters of the ocean, to convey the same intelligence to the eastern world, which it does almost with the speed and certainty that the will of an individual is conducted from the brain to the different members of the body.

Let this system of telegraphic communication be extended and perfected, let steamboat and railroad transportation be encouraged, let fares be reduced, and afford every possible facility for conveyance. Educate young men in our common schools in "agricultural chemistry," and finish their primary studies by sending them into different parts of the country. Let them analyze the soil carefully, compare the productiveness of different locations, and calculate the present state of their markets and its future prospects. Let them carefully notice the seasons, the influence of climate and probable healthiness of the various sections. Let them feel as they are growing to manhood that it is not necessary for them to marry their cousin, and locate themselves for life within sight of the smoke issuing from the parental roof. Let young men understand that farmers cannot always do as their father's fathers have done; that they cannot always divide their farms among their sons. Teach them in their youth, encourage them by your example, in habits of prudence, industry, temperance, observation, moral honesty and self reliance; and when they arrive at manhood send them out to explore and examine Uncle Sam's landed possessions, and rest assured that the better parts of this extensive farm will be first brought into a state of successful cultivation, for the same principles will apply to this extensive domain as to a common farm. Can you reasonably expect that a beginner upon a new farm will knowingly operate on the least productive part of his land first? Such a course would be injudicious; but the poor or waste land of a farm may be profitably improved after the better portion is placed in a situation not only to repay the labor that has been expended upon it, but to yield a profit to defray the expense of fencing and reclaiming the poorer lands, ditching meadows, sub-draining cold flat grounds, removing stones, and rendering productive that which would have otherwise been comparatively worthless.

Let the resources of each State be fully developed. Let a thorough geological survey be made, showing the different qualities of the soil and the extent and value of the different mineral deposits. In connection with this, collect statistics of mechanical pursuits, the demand and price of produce. Let the farmer keep a correct account with his farm, charging it with its cost, interest on the investments, taxes, labor and materials, and crediting it with its produce and improvements, and publish them in full agricultural reports. Let such reports be freely exchanged between different States, carefully examined and compared, and be assured that the State of Maine will not suffer by comparison with any other State, and that ere long every acre of land within its extensive limits will be in possession of operative farmers.

One erroneous opinion prevails in relation to the profits of farming pursuits, and very much retards their progress in this State. It is no uncommon thing to hear farmers complain that they cannot afford to hire men to work their land, that money is much better invested in trade or navigation, or loaned at interest, and in carrying this opinion into practice, are much in the habit of investing the proceeds of their lumbering and even farming operations, either in bank stock, navigation, manufacturing, trade, or the purchase of wild lands; and this, too, without even paying the farm the first dime for the use and keeping of the team, or board of the operatives. Again, our farmers are much inclined to draw a comparison between the profits of their farms and the same amount invested in other business, but in making this calculation, often forget that with an investment of a few hundred dollars in a farm, a large portion is included in a dwelling house and out-buildings, while in trade, navigation or manufactures, they only calculate the profit on the active or yielding capital.

The merchant, the manufacturer, the ship builder, and the farmer, must each have a dwelling house; but while the former consider their houses and furniture as capital, and actually obtain money by them for carrying on their business, the farmer would be considered insane who should mortgage his house to raise money to enrich his lands, trusting to the increase of crops to repay it. The farmer is not only subjected to loss from such unyielding capital, but is constantly paying tribute to it by making additions to his house, extending fancy fences, planting trees and establishing graded walks. While these improvements are going on at the expense of the farm, the women are not unmindful of the smaller fixings about house; appropriating the almost entire proceeds of the hennery and dairy to their fancy; exchanging the eggs, chickens, butter and cheese for fancy articles to be shut up in the "fore room," and not to be seen from one end of the year to the other; or to store their china closet with dishes and ornamental trash, never to be seen except at the birth of a child or the marriage of a daughter. The "wool," too, is claimed by the wife and daughters, and must be exchanged for silks, lawns, thibets, poplins or berage, for victorines, mantillas, chemisettes, cactus skirts, or for tambour cotton, saddler's silk and steel beads for ornamental needle work. A colt, yoke of oxen, or a cow or two must be sold for the purchase of a four wheeled carriage, which is again to be exchanged for a two wheeled chaise before it is half worn, as it has become unfashionable; a few tons of hay must be disposed of in order to procure a melodeon, harpsichord, or piano, as they are all the go; a hog must be killed and exchanged for a side saddle and riding dress, as horse back riding is considered a healthy exercise and a very desirable substitute for the work about a farm house, such as spinning, weaving, dish-washing and butter making. These things are all well enough, in their way, and perhaps ought not to be discountenanced, but certainly should be taken into consideration in making up the profit and loss account with the farm.

While the trader carefully estimates the profit and loss on every article in which he is engaged, while the ship-owner keeps a correct account with his ship, charging it with insurance, interest and deterioration, while the manufacturer notes the wear of his machinery, and counts upon the smallest refuse of materials that can possibly add to his profits, while the corn merchant calculates even to the wear of his bags in transporting corn from the vessel to his store, the farmer is too often unable to tell the number of acres cultivated, the amount and value of manure applied, the quantity of seed used, the number of days or value of labor expended, or the amount and value of the produce.

Ask the farmers, as I have frequently done during the past season, in relation to some farming operation, as corn raising, and see how often you will get such answers as I have obtained. They will tell you they planted about so much seed, on about such a quantity of land, worked about so many days with a team, worked about so many days planting, hoeing, weeding, and harvesting, and had about so many baskets of corn, including the soft or pig corn; and here often ends the whole account. From such a result they come to the conclusion that it is better to burn lime, make lime casks, burn bricks, or work in the ship yard and buy flour. They often entirely omit to tell whether part of the work in preparing the ground for the crop consisted in grubbing bushes, removing stones and otherwise improving the land; they scarcely notice the value of the beans and pumpkins, the result of the same labor, and seem to forget, entirely, the value of the stalks for fodder, and of the husks for mats, litter and manure; they have made no calculation as to the benefits of the manure applied, to future crops, and no deduction for the improvement of the soil for its next working.

Equally unsatisfactory will be the result when inquiry is made in relation to the dairy; farmers will tell you they keep so many cows, including heifers, use about so many tons of English, and about so many tons of meadow or swamp hay, it costs about so much for pasturing, and from the whole lot they make about so much butter and cheese. By a careful examination it will be seen that they make a very imperfect approximation to the weight of hay consumed, calculate the value of pasturage by common usage rather than by the actual value of the land employed, judge of the quantity of butter and cheese merely by the amount sold, without making a correct account of the milk, butter and cheese consumed in the family.

Now this system, or rather want of system, prevails to a very great extent in every department of the farmer's operations, and the number of farmers is exceedingly small who keep a day book, journal and ledger, in which they accurately enter all the transactions of the farm, keeping a correct account with every department of their operations, charging each with the amount of its expenses, and crediting each with the amount of its income or produce. Such a system is as necessary to the farmer as to those occupied in any other pursuit of life.

I propose to notice some of the wants of the agriculturist in the State of Maine, and particularly in this county.

The farmers of this State require a more thorough agricultural education. While medical, law, and theological schools are established, a mistaken opinion is prevalent that no particular education is necessary as preparatory to farming operations, that any one can be a farmer, provided he can hold a plow, swing a scythe and handle a pitchfork and hoe, and that nothing is necessary to secure a crop but to plow the ground and deposit the seed. It is hardly considered necessary to know what food or nourishment is required to sustain the plant, or whether such nourishment is contained in the land or must be supplied in the form of manures or fertilizers.

It would appear ridiculous to feed horses, cows, hogs, cats and dogs, on one and the same kind of food and expect them all to flourish; but this is no more inconsistent than to continue a crop that requires lime or magnesia for its growth, upon land that either never contained these ingredients, or from which they had been exhausted by successive crops.

In order to economize the operations of the farm, a knowledge of agricultural chemistry is almost indispensable, and instruction in its principles should be given in our common schools; an acquaintance with the principles of chemistry, would readily enable the farmer to tell if his land contained an excess of salts or alkalies, and as readily point with certainty to a remedy. We could expect but little advantage from spreading ashes on land that already contained an excess or sufficient quantity of alkalies. It is from this very difference in the ingredients of the soil that one farmer tells us that he finds more advantage from ashes than from any other fertilizer, and thinks it should be universally used, while another, after careful trial, finds no advantage from it. One farmer considers it entirely useless to plant wheat, with the expectation of raising a crop, unless he mixes lime with it, while another secures quite as good crops from clean washed seed, and, of course, condemns every preparation as the result of book or newspaper farming. The same diversity of opinion exists in relation to lime, plaster, salt, and guano. And all this difference of opinion grows out of the want of knowledge of the principles of agricultural chemistry, which perfectly explains these different results upon principles as well established as the laws of mechanics, hydrostatics or mathematics. In connection with agricultural chemistry, should be taught mineralogy and geology. A knowledge of these sciences would necessarily assist the farmer in many of his operations; would enable him to decide with certainty as to the value of land for any particular crop by the stones found upon its surface, or from the particles of which the soil is composed. The knowledge of farmers, generally, is very limited, "too limited," in these two sciences. We seldom hear them speak of minerals, stones or soil, farther than to mention iron ore, hard, flinty rock, or soft slate stone, and cold, heavy, clayey ground, or light gravelly loam; unless by chance some one may have found a small deposit of tourmalin, in connection with a granite ledge, or quarry of primitive or chrystaline limestone. By the aid of a work on geology they will soon begin to talk of primitive, secondary and tertiary formation; will become familiar with the names of hornblende, talc or talcose slate, and greywacke; but this information, even to those who possess it, is too limited and imperfect to be of much practical advantage, it being directed to one single point—that of making themselves suddenly rich by the discovery of a bed of coal, either on their own or neighboring farms.

This is not such a study of these sciences as I would recommend. It should be more general, more practical,—a knowledge by which the farmer may enrich himself and neighbors, by fertilizing and working the surface so as to secure a good crop, rather than by sinking a shaft deep into the bowels of the earth, with the expectation of finding fields of coal and beds of minerals among the primitive ledges of the State of Maine. It was not till about the middle of the last century that the structure of the earth engaged, to any extent, the attention of philosophers. Geology has now become an interesting and important branch of human knowledge. It is founded exclusively on observation; and, availing itself of all accessible sources of information, has already accumulated an astonishing amount of valuable and instructive facts.

There are but few persons, of inquiring minds, to whom the following questions have not frequently presented themselves: How was the world made?—of what material? The only answer to the first question is, briefly, by the "almighty power of its Creator." In order to answer the second question, it is necessary to examine the component parts of the substances of which the earth is composed; the order in which they are arranged, and what changes they appear to have undergone.

These inquiries comprise the most important objects of mineralogical and geological research, and the study and investigation of them must be of more immediate and practical advantage to the farmer than to any other class of citizens.

The State requires carefully compiled statistics and reports from every section of its limits. Each county should use every endeavor to have full and perfect reports at their agricultural fairs and meetings, and arrangements made by which such reports could be generally distributed. It is from such information, from reliable sources, carefully drawn up and published, that the results of farming in different counties can be compared.

May not the county of Lincoln look with reasonable expectations to the old county of York, on her west, for useful instruction in renovating and restoring worn out pasture lands, and the proper fertilizers for rendering productive, fields that have been exhausted from a long succession of crops? May she not look to the young county of Aroostook, at the east, for valuable hints in clearing the primitive forest trees, subduing under brush, removing stumps, and rendering new land fit for cultivation at the least expense? And in return, cannot the county of Lincoln furnish valuable information in relation to lime as a fertilizer, it being so abundant and cheap, particularly in this vicinity, as to enable any one thoroughly to test its value. Let the county of Lincoln be fairly represented, with its rich soil, fair cultivation, good crops, ready market, and high prices; publish the operations of our ship-builders, lime-burners, and other manufacturers, not omitting to call attention to the amount of bank stock held by farmers, ready at any time for a better investment, and I assure you that if every other county in the State can show an equal amount of wealth, young men will have but little inducement to leave Maine for the purpose of getting gain.

The State of Maine needs some system of instruction in practical farming,—some method by which young men may not only learn the theory of cultivation, but may serve an apprenticeship in agriculture. It cannot be expected that a broken merchant, run down lawyer, worn-out doctor, or retired shipmaster, can prudently manage the affairs of a farm. In every other branch of business a practical knowledge is almost indispensable, but farming has too long been considered so very simple that any one could at once engage in it without the least preparation. In this connection, I would remark, that some instruction is necessary for young ladies in order to make them good farmers' wives. Can it be expected that young ladies, fresh from the loom of a factory,—from a tailor or milliner's shop,—directly from the French teacher, or the music and dancing master, is well prepared to take charge of a dairy, and prudently to conduct the various affairs which should be under the direction and supervision of the wife of a farmer? They would hardly dare to cut a lining for a ninepenny calico dress, without having served a certain apprenticeship with a dressmaker; nor would they undertake to renovate and remodel a last year's straw bonnet, unless they had received instruction in braiding and sewing straw; yet who ever heard of one of them refusing to become a farmer's wife on account of her ignorance in spinning, weaving, making butter and cheese, drying apples and pumpkins, or saving and cleansing live geese feathers.

There is a subject, of much importance to the agriculturist, that has received but little attention in this State. The barometical and thermometrical changes in different parts of the State should be regularly and carefully noticed, and the results for a series of years compared. It is often remarked that the season is very dry, even when there are frequent showers; while, in in another season, vegetation flourishes and appears not to suffer from drouth, when there is but little rain. This difference is owing to different states of the air, which are readily discovered by the use of the barometer; and it is not improbable that to these very changes may be attributed the potatoe rot, the black wart on fruit trees, and the recent fungus growth on corn.

It may be said, by some, that if these wants are to be supplied by the State, through the exertions of the agriculturists, it will be requiring too much. I would ask has not Maine a duty to perform towards the United States? Must not we exert ourselves to sustain our national honor? Can we not contemplate with pride the part which America has borne for the last half century in the sublime career of human progress?

When we reflect upon the extent and value of our territory, the vast productiveness of our agriculture, the increase of our material wealth, the progress of our manufactures, the security of property and personal liberty, the exemption from grievous taxes, the development of our unrivalled commerce, the increase in general intelligence, the magnitude of our railroads, our growing influence in the affairs of the world, and our military and naval achievements, there is enough to justify us in all the exultation we feel, and even more than is sarcastically attributed to us by those who envy our position. Our progress as a nation is truly without a parallel in the world's history; and it is impossible, without emotion, to reflect that our country, in the brief space of a man's life, has, from the feebleness of infancy, attained the stature and strength of a giant.

In no half century of the world's history have great events in science and arts so crowded upon each other as during the past fifty years. In no age was it ever so inestimable a privilege to live. Of such time as that in which we live, twenty years are worth inconceivably more than the lifetime of all the patriarchs. Within this time machinery has been made to till the ground for man, gather its fruits, feed and clothe him, and erect his buildings. The railroad and locomotive are his swift servants, almost annihilating for him time and space. With his steamship he rides the waves on a charger; with his diving-bell he explores the awful depths of the ocean; and, anon, with his baloon, he spurns the ground and soars among the clouds. Taught by Daguerre, he has brought the great Apollo from his chariot in the heavens down to his studio, and compelled him, as an humble artist, to paint his pictures; by geology he has almost wrung from the earth the secret of its creation; he has weighed the earth as in a balance, measured the stars, tracked the comets, mapped the heavens, and exhausted the shining worlds in our system.

While these great strides have been taken, these wonderful discoveries made, has the United States been an idle spectator? No. She has explored the southern hemisphere, and discovered an antarctic continent; she has sent succor for the lost navigators, and reaped a rich reward in the discovery of the North Polar Ocean; she has traced the river Jordan through its tortuous course; surveyed the Red Sea, and reported upon the great river Amazon; she has surveyed various routes across the great range of the Rocky Mountains, and through her coast survey produced results of untold value to this nation, and added a vast amount of science to the world.

Her Espy has taught the world the true philosophy of storms.

Her Maury has set up marks for highway over the mighty and trackless ocean, furnishing the mariner on every sea with a spell that renders the winds and the waves propitious, diminishing the risk of commerce, giving direction to chance and adding millions to the wealth of the world.

Her Morse has completely subdued and brought into use the lightning of heaven, and the very thunder bolt of Jove, at the bidding of man. is made to carry his wishes almost with the speed of thought over the surface of the earth, and under the sea, through a continuous iron girdle round the world.

The strange phenomena of the zodiacal light, meteors and falling stars, have been recently satisfactorily solved by the Rev. Mr. Jones of the United States Navy.

When we examine the printed proceedings of the "American Association for the Advancement of Science," the scientific works issued by the "Smithsonian Institution," and the annual publication by congress of the official reports of explorations, expeditions and surveys undertaken for scientific purposes, may we not readily answer the insulting question asked not many years since, "*who reads an American book?*" We can truly boast that American books *are* read by every lover of science every faithful observer, every laborious student and every patient thinker.

While the United States is establishing a lasting reputation for scientific discoveries, and invaluable improvements for the convenience and happiness of man, shall Maine continue an idle spectator? Shall her great class of agricultural citizens look on with listlessness and inattention? Shall the farmers of Lincoln be behind her sister counties in pressing the claims of agriculture?

Shall Lincoln neglect to develope her resources, and publish the result of careful and well conducted experiments in the cultivation of crops, fruits and stock? Have we not the soil, the wealth, and the enterprise, necessary for conducting such a course of experiments? Is not the State offering inducements, by establishing a Board of Agriculture, furnishing blanks, and providing funds, for the very purpose of procuring such information?

The county of Lincoln, although it has been cut and mangled,—although it has lost the rich manufacturing district of the Androscoggin, and the valuable waters of the Kennebec, is still worthy of notice, and will not suffer by comparison with any other county of the State as an agricultural district.

There is no county in the State of Maine which is furnished to so great an extent with navigable tide waters as the county of Lincoln. Nineteen towns of the twenty-four of which the county is composed, are situated on navigable rivers or the sea board- At the west is the Sheepscot river, for the accommodation of Southport, Boothbay, Westport, Wiscasset and Alna. The Damariscotta river, affording like facilities to Bristol, Newcastle, Damariscotta and Nobleborough. The Muscongus, supplying Bremen, Friendship and Waldoborough. The Georges, supplying Cushing, Warren, St. George and Thomaston. While the broad Penobscot supplies South Thomaston and Rockland.

While this large number of towns is thus accommodated for shipbuilding and transportation, they are nearly all good agricultural districts; and while the attention of their citizens has been directed to shipbuilding, lime and brick manufacturing, and freighting, they have opened an extensive and ready market for all the fine farming towns of the interior; the towns of Dresden, Alna, Whitefield, Jefferson, Washington and Union, can here find a ready market, and ready pay at remunerating prices for all their surplus stock and produce.

In addition to the advantages of so many navigable rivers, we have in this county water power for manufacturing purposes, quite equal, if not superior, to any other in the State, and far too valuable to be passed without notice.

The falls at Nobleborough, supplied by the great Damariscotta pond, are capable of forcing any amount of machinery, and must necessarily within a few years make an active manufacturing village at that place. Nor should we overlook the fine water privileges at Warren and Union, on the Georges river. Warren and its vicinity are at present realizing an advantage from this privilege in the amount of woolen cloth and yarn that is there manufactured, specimens of which are on exhibition at your fair, and are well worth a careful examination as samples of their work.

The falls at Union are successfully occupied in the manufacture of tools, and materials for the extensive carriage factory at that place—a factory that is not only an advantage to the town, but a credit to the county, and an honor to the State; and I venture the assertion that the specimens of carriage work from that factory, on exhibition at this fair, will not suffer by comparison with similar work in this or any other State.

Look at the rich farming lands in the interior towns extending from Dresden to Union. There is an almost uninterrupted tract of land not only well adapted to agriculture, but under a fine state of cultivation, which is constantly advancing, as appears from the improvements in the houses and farms, the enlargement of barns, the increased crops of hay and grain, and the decided change in the quality of cattle, horses and hogs.

Much of this improvement is dependent upon the high and ready market afforded by the vast amount of shipbuilding and lime-burning that is carried on in the seaboard and river towns —the former, a business that has been carried on to a greater extent in the county of Lincoln for several years, than in any county in the State—a business that, while it has enriched those who have engaged in it, has furnished employment to a large number of workmen, and opened a ready market for all kinds of farming produce. Look at the changes, notice the inrrease of wealth growing out of this branch of business.

At the extreme west of our county we have the beautiful town of Wiscasset, with her proud ships floating on her basin of never freezing waters—ships built by her own citizens, with their own capital—and owners ready and able to buy all the surplus hay of the interior towns at remunerating prices, thus furnishing cargoes for their ships, and a market for the farmer's produce.

At the east we have the young city of Rockland, situated on the broad waters of the Penobscot, burning its vast amount of lime, and building its large amount of tonnage of ships, furnishing employment for thousands of men, and opening a market for any amount of farming produce.

Notice the rapid growth of Newcastle and Damariscotta, towns that have grown almost as by magic,—towns that have doubled and quadrupled their wealth within a few years by the amount of shipbuilding that has been conducted by their enterprising citizens; while Waldoborough, from the same source, has twice, within a few years, Phœnix like, grown from her own ashes, with increased splendor and durability.

It is almost useloss to call attention to Thomaston. You are here and can judge of its situation at a single glance. Look where we will, and we find indications not only of comfort, but every mark of luxury and wealth; while their beautiful dwelling houses and ornamented yards display taste with every regard to comfort; their churches, school houses, and well macadamized streets, extensively ornamented with trees, are sure proof that this is not the home of the miser. Look at the fleet of mammoth ships in process of construction, about ready to pass from the hands of the carpenters, joiners, caulkers and painters, to the care of the riggers, sailors and masters, and you will at once conclude that capital here is not hoarded up, only to be loaned at an exorbitant rate of interest, but that the capitalists are ready to make business for mechanics and a market for the agriculturists by an active use of their money.

In order to illustrate the extent and influence of this business, and its assistance to the agriculturists, I have obtained some statistics showing the operations in ship building in Thomaston during the present season. The number of ships in process of construction is eight, of an average tonnage of 1200 tons. Allowing fifty men to each ship, and one hundred and twenty days the time for building and rigging, and we have forty-eight thousand days' work, which, at two dollars per day, will make the sum of $96,000, to which should be added, for labor in cutting the timber, $19,000, making a total of $115,000 paid for labor and board, besides a large amount for freight on timber and other materials necessary for their construction. This sum divided will give $4594 to each town in the county.

The lime business at Rockland is another source of profit to the agriculturist, and should be particularly noticed as one of the advantages of Lincoln County. The amount of lime manufactured has averaged nearly five hundred thousand casks per year, for several years, and it may safely be calculated that the labor amounts to sixty cents per cask, making $300,000 paid for labor, board, and team work, besides the large amount paid sailors and others engaged in its transportation.

With all these advantages, with the navigable rivers, valuable waterfalls, good timber and fine soil embraced within the limits of the county of Lincoln, with so many men profitably employed in various mechanical operations, with the vast amount of capital that is circulated through these operations, with all these advantages, I say, can any one doubt that farming can be made profitable in this county? Not that broken speculators, bankrupt merchants, worn out lawyers, superannuated doctors and disappointed ministers can buy a farm on credit, and without experience, and with but little labor, make both ends meet. Such farmers are inclined to follow the text of scripture to the letter: "Paul may plant, and Apollos may water;" but as they are not there required to hoe, they justify themselves in dispensing with this very important operation.

Let young men, with some preparatory education, devote their attention to farming in the county of Lincoln, and they may be assured that at the expiration of twenty years they can with satisfaction compare their situation with that of a very large proportion of those of their age who have been engaged in other pursuits.

If any doubt this, let them look at the fine specimens of produce at the fair, and be convinced of the productiveness of our soil; let them notice the horses, stock and hogs, and satisfy themselves of its adaptation to stock raising; let them smell and taste the butter and cheese, and be satisfied that we have mothers capable of instructing their daughters and others in the art of making these articles, that add so much to the luxury of living; let them inspect the specimens of industry, economy, patience and taste in the exhibition of carpets, rugs, patch-work bed quilts, and fine needle-work, with which our hall is ornamented, and assure themselves that there are daughters who do not consider it disreputable to be found at some useful employment.

Agriculturists of Lincoln, upon your efforts depend very much the continuance and success of this society. Devote to its interest a portion of your time. Institute a series of experiments in practical farming, carefully notice the results, and communicate them to the society. Obtain full reports from your awarding committees, have them carefully compiled, printed and circulated. Enlarge your society and extend its interest, and in a few years it may become not only a fair of exhibition, but of sale and exchange—a great mart, where annually we may meet for social intercourse and mutual pleasure, from all parts of the county, and make such meeting useful and profitable, by affording an opportunity for buying, selling and exchanging.

Ladies of Lincoln, upon your continued exertion and assistance are founded the hopes of this society. Without your continued aid the society would soon lose its interest. Upon your efforts in collecting and arranging the fine specimens of useful and ornamental work much of the interest of the fair depends. Continue your assistance and cooperation, and show by your example that labor is no evil—that there is an enjoyment in the occupation that furnishes the bread we eat and the home we enjoy.

"May we feel that in the calm and rational pursuits of agriculture and its kindred branches, horticulture and arboriculture, there is less excitement of the passions, less temptation to lure from the path of virtue, and a constantly ennobling influence, that lifts the soul through nature to nature's God. That God is daguerreotyped, as it were, before us all; and we see his wisdom and love in the bending grass, the trembling leaf, the sparkling dew, and in the thousand wonderful operations constantly carried on by his superintending care, and which are ever present to him who cultivates the soil. That there are lessons of trust, of confidence, of submission, to be found in the garden and the field in many different forms. That wisdom may be found in every flower that blooms, or insect that lives. That there are

'——Sermons in stones,
Books in the running brooks,
And good in everything.'"

WALDO COUNTY AGRICULTURAL SOCIETY.

Expenditures for the year ending December, 1856.

Amount paid in premiums, . . .	$331 37
Amount paid incidental expenses, . .	157 25
	$488 62

From the general statements of committees and the number of premiums awarded, it is manifest that this Society had a fine show, and it is a matter of regret, that so little material is furnished that will serve to give the public an insight into the exhibition. The reports of committees are confined almost exclusively to the statement of the names of the successful competitors, and the awards. No descriptions to any extent are furnished either of the animals or articles that will give an idea of their character, either by competitors or committees.

From the statement of Elias Seavey of Troy, it appears that he exhibited Durham oxen, and prefers this breed for labor.

C. Fish of Hope, showed a horse, and says "he prefers the Island Grey and Black Hawk breed, on account of being docile, kind, and fast walkers."

Simon Fish prefers the Messenger and Morgan for the same qualities.

E. Whitcomb showed a mare half Fox and half Canadian, with colts sired by a stallion half Fox and half Morgan, and commends them as excellent for work or for the carriage, kind and fast walkers.

Statement of John Hegan, Prospect. "I present a farm stock, consisting of four oxen, six cows, twenty head of young cattle, and two horses. The neat stock is three-fourths Hereford and one-fourth Short-horns. The oxen are very docile, of beautiful figure, and easily matched. The cows are good. I think the Hereford breed will yield the greatest amount of beef for the cost, of any stock known. I calculate to let my calves suck or drink. I prefer letting them drink till they are about ten or twelve weeks old. After that I feed them on grass and hay. The oxen average, in girth, seven feet and four inches. The cows I consider very good, both for milk and stock. The two best of them gave, in June and July, forty pounds of milk per day. I seldom give any provender to my stock."

A partial statement of crop grown by Robert Patterson of Belfast, is found, to wit: three hundred and twenty-three bushels of ears of corn and twenty-one and one-half bushels of beans from two acres of land; thirty loads of manure applied, no particulars are given as to culture, character or previous condition of soil, or other items of interest.

From the report of committee on grain crops, it is seen that no premium was given for the above, the first premium on corn being awarded to David Norton (whose statement is not found returned) and the committee say that no other applicants made the required statements.

FRANKLIN CO. AGRICULTURAL SOCIETY.

Report on Apples, Seed Corn, etc.

When we consider the adaptedness of the soil and climate of Franklin, to the raising of the best apples for market, we can but consider, as well as regret, that so few specimens of apples were presented. No specimens of summer or fall apples or of native fruit of any kind were offered. Six specimens of winter apples were exhibited, all of which were particularly large and nice.

Amos Goding of Jay, offered good samples of Black Oxfords, Harveys and Baldwins. We consider Mr. Goding's Black Oxfords the best specimens presented, and award to him the first premium.

Samples of Baldwins were offered by Benjamin Watson of Fayette, and by Oliver Gould of New Sharon, which were very fine. To the Baldwins presented by Mr. Goding, however, the committee award the second premium, though not without some hesitation, in view of the claims of his competitors.

A sample of apples, very fine, were presented by Nathaniel Woods of Farmington, as Black Oxfords, but we incline to the opinion that they are the variety sometimes called the Black Pearmain.

When we reflect that the corn crop is second only to the grass crop, within the geographical limits of our Society, we are pleased to record the fact that a most spirited competition was manifested in the department of seed corn. Numerous specimens were presented, all of which are deserving admiration. The varieties presented were, first the common twelve rowed, or a mixture of the Dutton and other varieties; second, the large kernelled eight rowed variety; and third, the King Philip corn. All the specimens presented were so perfect of their kind, that the committee can do little more than express their own convictions in relation to the choice of varieties. In the estimation of the committee all the varieties of the eight rowed have advantages over the twelve rowed. The kernel is larger and of greater weight in proportion to the stalk, the cob being smaller, is more easily dried in the crib, and the eight rowed ripens more rapidly. The large eight rowed variety when first introduced from a more southerly latitude, is rather later than the Dutton, but that which has been subjected to a few years' acclimation becomes as early or even earlier than the Dutton, without losing its prominent peculiarities—the largeness of the kernel—and has your committees' decided preference. The specimen presented by Ezekiel Luce of New Sharon, being the freest from admixture with other varieties, receives the award of the first premium. To a beautiful specimen of large eight rowed presented by H. B. Prescott of New Sharon, the second premium is awarded. To a specimen presented by Orin Daggett of New Sharon, the third premium is awarded. This specimen was selected from two hundred bushels of ears which were harvested from two acres which was only manured in the hill. It was planted the 22d of May, and harvested the 10th of September.

John Morrison of Farmington, presented a basket containing elegant specimens of three distinct varieties, one of which was eight rowed, large, pearly, white, ripe and sound. To Mr. Morrison's lot the fourth premium is awarded.

Specimens of remarkable beauty were likewise presented by John Hamilton of Wilton, Amos Goding of Jay, and Moses Craig.

Specimens of the King Philip corn were presented by Silas Merrill of New Sharon, and by James Scales of Temple. The ears and kernel in both specimens were large, and well ripened. When first introduced, this variety is about fourteen days later in ripening, than the Dutton corn; but it is said to become acclimated and early, after a few years planting. The yield of this variety is greater than that of the common varieties, and the stalk is very heavy and tall.

J. S. Swift, *Chairman.*

NORTH FRANKLIN CO. AG. SOCIETY.

LIVE STOCK.

Statement of Albert Pease. "The animal I present for premium is a three years old heifer, grade Durham. I prefer the Durhams mainly as milkers; but think them superior *only when fed high.* In June and July she usually gave a ten quart pailful froth and all. Her feed the last part of the season was short, and she gave much less."

BREAD.

Statement of Mrs. C. Robbins. "I present a loaf of wheat bread for premium. It was made from flour, manufactured by my husband, from wheat that was purchased. In its manufacture, I used, in addition to the flour, one pint of cream, one pint of boiling water, one table-spoonful of white sugar, and one tea-spoonful of salt. The dough was raised six hours, and then baked in a stove oven."

CROPS.

Statement of Hunter & Dodge. "We raised forty-seven and one-half bushels of good shelled corn, beside ten or twelve baskets full of soft ears. The above corn was raised on greensward, plowed the 15th day of May last, and planted the 18th of the same month, on a damp, heavy soil. We carted on and spread twenty loads of green manure, then plowed eight inches deep, turning all under; then harrowed thoroughly lengthwise; then with a small plow furrowed it out, and then carted on and dropped in the hill, fifteen large loads of hog manure, and the scrapings of our barn yard. Our corn looked well, except about one-third of it, which did not come. We planted it over the 10th of June, and on the 30th of July watered the whole with urine and other slops, applying about a pint to the hill. This caused it to make rapid strides in growth, for the remainder of the season. The whole got ripe."

R. W. Libby's statement. "Planted fifteen bushels of Peach blows and old white potatoes on one acre. The soil is a sandy loam, light and friable, with an open, pebbly subsoil, and free from stone. Plowed about eight inches deep; planted in rows three and one-half feet apart, and two feet between the hills. Produce, two hundred and fifty bushels; no manure."

Expense; plowing,	$6 00
Seed,	3 00
Hoeing,	5 00
Interest on land,	5 00
	$18 00

Statement of E. B. Hunt. "Planted one acre of corn on the 25th day of May, on a light and friable loam, eighteen inches deep, underlaid with a hard, impervious subsoil. The soil is of a light color, and quite stony, the stones being a mixture of large and small. Corn was grown on it the year previous, and it was plowed about four inches deep, and about six cords of equal parts of hog and barn yard manure applied. The variety planted was the Dutton, in rows four feet apart, and in hills three feet apart. It was hoed twice and top-dressed with ashes. Cut it up at the roots, in October. Produce, one hundred and twenty-five bushels of ears."

Cost; plowing,	$5 00
Manure,	12 00
Ashes,	1 40
Hoeing,	8 00
Harvesting,	6 00
	$32 40
Produce, 62½ bushels at $1.00,	62 50
Profit,	$30 10

Statement of R. W. Libby. "Sowed one-eighth of an acre to ruta baga turnips. The soil was a sandy loam, not very well worked, though light and friable. It is a dark soil about two feet deep, and underlaid with a loose and gravelly subsoil. It is free from stone and was plowed last spring for the first time, and about six inches deep. It was thoroughly harrowed before sowing, and this was all the cultivation the ground received. Hoed them twice; sowed the first of June, and harvested the last of October. Produce, ninety-three bushels, at an expense of about $5.00."

EAST SOMERSET AGRICULTURAL SOCIETY.

LIVE STOCK.

Statement of Wentworth Williams. "I present one pair of team horses and a pair of calves. One horse is part Morgan, and the other from Messenger stock. I prefer the Morgan breed for strength and beauty. The Messenger blood has the same general qualities, but is not as intelligent and beautiful as the Morgan. The Morgan horse, I understand, was raised by Asahel Stetson of Palmyra, and the Messenger, by some person unknown to me, in Fairfield. I keep them on hay and grain. I give them twelve quarts of oats per day. They are both kind in disposition and fast walkers. I find the Morgans the most kind, docile and quiet.

"One of the calves is Hereford and the other Durham. I prefer the Hereford breed of neat stock, as best built for strength and durability, and making larger oxen. I raised them myself. They had only common feed, were taken off the cows at twelve weeks old. I then gave them two quarts of oats night and morning up to this time. I find the Herefords the most kind, docile and quiet. The cow was fed as usual, but she had four quarts of potatoes a day for about two months before calving."

DAIRY PRODUCE.

Statement of John Rowell. "My dairy consists of five cows. In the manufacture of cheese, our method is this: Set the milk when first milked, and immediately add the rennet. When curdled, dip it out and drain off the whey, and scald it with water. I then let it stand till it is cold, then cut it up and salt it, when it is ready for the press. After it is pressed, rub it with the yolk of an egg and butter, and turn it every day till it is dry for market."

Statement of Henry Fairbrother. "I have but two cows in my dairy. In addition to hay and straw, I give my cows a few roots. I churn the cream only. After working out the buttermilk, I put in one and one-half ounce of salt, three table-spoonfuls of loaf sugar, and one tea-spoonful of saltpetre, to ten pounds of butter. My cows average seven pounds of butter per week."

F. R. Dinsmore of Hartland, Ellis Fish of St. Albans, and C. B. Stinchfield, all describe nearly the same mode of procedure in the manufacture of both butter and cheese as above. The first had only a Durham heifer, and she averaged fifteen quarts of milk per day, and during the months of June and July eighteen quarts, and during the week ending September 27th, he made from her milk eight pounds of butter, she having no feed but grass. Mr. Fish had but two cows. He makes cheese only during the hot weather. From their milk he made seventy-five pounds of cheese per month. Mr. Stinchfield is particular to have his milk set in a cool, airy place, but "not in a cellar." He washes his butter in cold water, and is careful to have his cheese put to press cold. He made a cheese from six days milk of two cows, weighing twenty-two pounds, beside supplying milk for the use of a family of eight persons."

Vegetables.

Warren Fuller raised a crop of ruta baga turnips on a yellow loam, plowed six inches deep, manured with green manure at the rate of six cords to the acre, on which he received a premium. The ground was plowed in the fall of 1855. The manure was applied in the spring, and harrowed in. The seed was sown in drills, three feet apart. Raised at the rate of eight hundred and ninety-six bushels to the acre.

J. P. Roberts raised a crop of carrots and onions on a sandy loam, and received the first premium on the onions, and the second on the carrots. The land was taken up from grass in 1855, seven loads of manure applied on one-eighth of an acre, and planted to carrots and onions. The present year, seven loads of old manure were applied to the same ground. On the portion sowed to onions, he burned straw. After the plants came up, watered them with the leach of hen manure. It was plowed about ten inches deep. Seed was of red onions, and white and yellow carrots. The drills were twelve inches apart, and the plants thinned to about three inches. The ground was often stirred, and the weeds kept down.

FRUITS.

Peleg C. Haskell received the first premium on apples, of the New York Russet variety. The trees are about twenty years old, grafted on seedling stocks, and in the tops while they were young. The soil on which they grew is a deep gravelly loam. When young the trees were white-washed, but on subsequent experiment, found washing with weak lye preferable. The land on which they grow has been pastured about one third of the time, and manured from the barn-yard and mowed the rest of the time.

CROPS.

Peleg C. Haskell obtained the first premium on rye, and the third on oats. These crops were grown on a clay loam, but few stone and these slate. The soil is light and friable, from one to two feet deep, of a greyish color, underlaid by a subsoil partly clay and partly a hard gravel. It was a sward, plowed about six inches deep in the fall of 1855, on which the oats were raised. The rye land was planted to corn and potatoes the previous year. No manure was applied. The variety of seed was the white rye and Scotch oats. It was sowed broadcast, at the rate of one and one-half bushels of rye, and four bushels of oats per acre. Harvested about the 20th of August, and cut before fully ripe. Produce was twenty-one bushels of rye, which weighed eleven hundred and seventy-six pounds; and forty-four and one-half bushels of oats, which weighed fourteen hundred and sixty-eight pounds. The straw of both crops was three tons.

Sowing and harvesting rye,			$5 00
Seed,			1 50
			$6 50
21 bushes rye at $1 per bushel,	$21 00	profit,	14 50
			$21 00
Sowing and harvesting oats,			4 00
Seed,			1 60
			$5 60
44½ bush. oats, 40 cts. per bush.,	$17 80	profit,	12 20
			$17 80

John Rowell received the fourth premium on oats. They were sown on a "stony loam," light and friable, and about one and one-half feet deep, of a yellow color, underlaid by a hard gravelly subsoil. The stones are small and of granite. It was plowed about eight inches deep, and no manure applied. Sowed about the first of May broadcast, with four bushels of seed per acre, and harvested in August, while rather green. Produce fifty-five bushels.

Plowing and harrowing,			$6 00
Harvesting,			1 50
Threshing,			2 25
Seed,			1 60
			$11 35
55 bush. oats, 37½ cts. per bush.,	$20 62	profit,	9 27
			$20 62

Warren Fuller was the successful competitor for the first premium on oats, and the third on wheat. This land is a light and friable loam, one foot deep, of a yellow color, and underlaid with a hard subsoil. The stones are granite. The land sowed to oats was sward ground, and that to wheat grew a crop of corn the year before. It was all plowed eight inches deep. It was sowed broadcast, with the white bearded wheat, at the rate of one and one-half bushels to the acre, and white oats at the rate of four bushels to the acre. Wheat sowed

May 25th, and oats May 22d. Harvested the last week in August. Produce, fourteen bushels of wheat and fifty-four bushels of oats. Wheat weighed 840 pounds, and the oats 1,640 pounds.

Wheat: plowing and harrowing,		$4 00
Harvesting,		2 00
Threshing,		3 00
Seed,		3 00
14 bushels wheat, $2.00 per bushel,	$28 00	$12 00
Profit,		16 00
		$28 00
Oats: ploughing and harrowing,		8 00
Harvesting,		2 00
Threshing,		2 00
Seed,		1 60
54 bushels oats, 37½ cts. per bushel,	$20 25	$13 60
Profit,		6 65
		$20 25

Ellis Fish entered for premium on wheat, oats, onions, carrots and turnips, and obtained the first on wheat, the second on oats, and the second on onions. The wheat grew on a sandy loam, the oats on a clay loam, and the roots on a yellow loam. His farm is generally a clay loam, but there is a sandy ridge, commonly termed a "horse back," running through it. What land he cultivates is mostly free from stones. All the ground was plowed about eight inches deep, and about twelve cords of manure to the acre was applied to that where the roots grew. The wheat was of the "Black Sea" variety; the oats were from the Patent Office, and said to have been raised by Lieut. Hunter of Virginia, all sown broadcast. Wheat sown May 5th, and oats May 8th, and harvested in August. Wheat sowed two bushels per acre, and oats four bushels. Onions sowed in drills fourteen inches apart, and plants four inches; carrots, drills eighteen inches, plants two inches apart; turnips twenty-four inches, in drills, and plants eight inches apart; onions sowed April 15th; the carrots and turnips June 2d, and harvested the onions October 1st, and the others the last of October. In consequence of the bad weather, the wheat and oats wasted a good deal more than the seed. Produce, eighteen busnels of wheat, forty bushels of oats; five hundred and sixty bushels of onions; six hundred bushels of carrots, and eight hundred bushels of turnips.

18 bushels wheat, $1.50,	$27 00
40 " oats, 37½ cents,	15 00
560 " onions, $1,	560 00
600 " carrots, 30 cents,	180 00
800 " turnips, 20 cents,	160 00
	$942 00

No statement is given of the quantity of land cultivated, though the inference is, that it was one acre to each crop. If it be so, here is an average produce $188.40 per acre, or $942 from five acres. Surely a generous return and rather ahead of farming "out west."

H. H. Webb received a gratuity on a crop of wheat which grew on a fine, slaty soil, of dark color, underlaid by a slate ledge. The soil is free from stone. The seed sown was the Java wheat. The year before, the land was planted to corn, and manured in the hill, on a sward. It was plowed about eight inches deep, and sowed May 5th, broadcast, at the rate of two bushels to the acre; was harvested August 20th, when quite green. Produce per acre, eighteen bushels, which weighed two hundred and eighty pounds.

Plowing and harrowing,	$6 00
Harvesting,	2 00
Thrashing,	3 00
	$11 00
18 bushels wheat, $3,	54 00
Profit,	43 00
	$54 00

Philip Hubbard obtained the first premium on corn, the first on barley, and the third on potatoes. These crops were grown on a sandy loam, fine, light and friable, of a yellow color, and two feet deep, with a hard, gravelly subsoil. The stones are granite, and but few. The ground was a sward broken in the fall. The corn was manured with eighteen loads of manure in the hill, and one spoonful of plaster; and the potatoes with fifteen loads plowed in, and a spoonful of plaster in the hill. The corn was the large eight rowed variety, the barley two rowed, and the potatoes "Pink Eyes." Corn and potatoes planted May 19th, and barley sowed May 16th. Corn three and one-half feet each way, and the potatoes three feet between rows and two feet between hills. Barley sowed broadcast. Quantity of seed, one peck of corn, three bushels of barley, and fifteen bushels of potatoes to the acre. The corn was hoed twice and the potatoes once. Corn was top-dressed with ashes. The top stalks were taken off, which he thinks best. The barley was harvested in August, and produced twenty-three bushels; the corn the last of September, and produced one hundred and sixty-five bushels of ears of corn; and the potatoes, one hundred and twenty-seven bushels.

CORN.—Plowing,		$5 00
Harrowing,		2 00
Manure,		18 00
Planting,		3 00
Hoeing,		8 00
Harvesting,		5 00
		$41 00
82½ bushels at $1,	$82 50	
Fodder,	5 00	
	$87 50	
Profit,		46 50
		$87 50

BARLEY.—Plowing, harrowing and harvesting,		$5 00
23 bushels barley at $1,	$23 00	
Profit,		18 00
		$23 00

POTATOES.—Plowing,		$2 00
Harrowing,		1 00
Planting,		3 00
Hoeing,		2 00
Digging,		6 00
		$14 00
127 bushels potatoes at 50 cts.,	$63 50	
Profit,		49 50
		$63 50

WEST SOMERSET CO. AG. SOCIETY.

Of this Society, the Secretary remarks as follows:—"This Society is in a flourishing condition. The shows of stock especially, are of a very high order. The Society has always been well united, and notwithstanding we are surrounded by other societies, we always draw together a great number of spectators."

LIVE STOCK.

Samuel W. Tinkham of Anson, presented for premium to the West Somerset Agricultural Society, his stock, consisting of one yoke of working oxen, one yoke of three years old steers, one yoke of yearling steers, and two cows. The cows were full blood Durham, and the oxen and steers grade Durhams. The quality of the cows was tested by setting their milk seperately, while they were at pasture, and they made from six to ten and one-half pounds of butter per week. The cows and steers were bred by himself, and the cows were fed on hay and straw until three weeks before calving, after which, he gave them "provender." The three years old steers girted six feet six inches, and the yearlings six feet.

A French buck and half blood ewes were presented by Jonah Houghton of Anson, and a French merino buck and a half blood Silesian buck were presented by S. W. Smith of Anson. They were from the flocks of S. W. Jewett, Weybridge, Vt., J. A. Tainter of Hartford, Con., and B. T. Dinsmore of Anson. They say the fine wooled sheep are more docile and contented than the coarse.

Joshua Burns says: "I give my calves the milk of one cow the first four or six months, and then wean them, and give them some roots with a little corn meal and oats, to keep their hair smooth. After the first winter I give no provender, but feed on salted hay and keep water in the yard. I choose to have steers handled from three to six months old. I consider this much the cheapest and most effectual way to make well trained oxen."

Statement of C. R. Vaughan. "I hereby certify to the follawing, as the amount of beans raised on three-quarters of an acre of land, viz: five and one-fourth bushels of Marrowfats, and nine and one-half bushels of Bluepod beans.

Mode of raising. The land was a sandy loam, old mowing; had borne but little grass for several years; was broken up about the twelfth of May last, and harrowed twice and cultivated once; then furrowed four feet one way, and three and one-half feet the other, making the rows both ways. Dunged one shovelful in the hill, compost manure. The bluepods were planted the 18th of May, on one side of the hill, the manure being first covered with dirt. About the 8th of June the marrowfats were planted on the other side of the hill. They were cultivated twice both ways, and hoed once. The marrowfats got ripe first and could be easily distinguished from the others —no trouble in separating. These beans were poorly planted and poorly hoed, by a hired boy, at his stent. Dropped four and five in a hill, but one-half did not come and grow.

Respectfully submitted and certified to the 1st day of December, 1856."

Statement of Columbus Sawyer. I hereby certify that I raised on one acre of land what we called seventy bushels by measuring it in the ear, for the corn is not shelled.

Mode of Culture. The land was planted the previous year one-half to corn and the other half to beans. After harvesting, it was plowed from eight to ten inches deep, and left in the furrow until the 16th of May; it was then harrowed across the furrow, then lengthwise, and cultivated in like manner to the depth of six inches; then harrowed again both ways; then furrowed three and a half feet from the centre of one to the other both ways; then a shovelful of manure put in each hill taken from the barn-yard the fall before and laid in a heap; the manure was covered with a hoe, making the hill ten or twelve inches, and flat on the top; the corn was then dropped six kernels in a hill, three inches apart. It was planted the 28th day of May, and cultivated and hoed twice; at the last hoeing, one kernel was taken out and five left. The seed planted was what some call the King Philip, and others the Brown corn.

COLUMBUS SAWYER.

CROPS AND COMPOSTS.

Only two lots of compost manure were entered, and of these your committee are of the opinion that C. R. Vaughan's is decidedly the best, both from the place and mode of preparation. We would however suggest that it might have been better to have applied the lime to the muck previous to composting. We award him the society's first premium.

We also award to Rufus Bixby the second premium for his compost heap, prepared in his barn-yard, but should have awarded it to the lot prepared in his piggery, had it been large enough to come under our consideration, according to the rules.

Your committee award to Columbus Sawyer of Starks, the society's first premium on corn, he having raised seventy bushels per acre.

We award to C. R. Vaughan of Norridgewock, the first premium on his crop of beans.

All which, with the statements annexed, are respectfully submitted.

JOHN S. LONGLEY, *Chairman.*

Statement of C. R. Vaughan. Having duly entered a compost heap for premium in the West Somerset Agricultural Society, I hereby certify to the following specifications. The compost heap for which I apply for a premium was made during five and one-half months, commencing June 1st, 1856, and completed the 15th of the following November. Size of the heap, twelve feet wide, thirty-six feet long, and some more than four feet high, measuring some fourteen cords. It is situated under the tie-up floor, in a vat, water tight, plank bottom and sides. It is composed of the following ingredients:

Manures. The manure and urine of three head of horned cattle, tied up nights all the while, and one horse part of the time; three hogs all the time; the manure of twenty hens, carefully saved under cover, and occasionally mixed in; the contents of the privy, six and seven in family; box water tight.

Coarse manures, muck, &c. Coarse straw dung, ten cart loads in June; two cart loads of rotten cob and rich earth, in June. After this, muck was hauled in about once a week, until it was completed. The muck was hauled from its bed one year before, and laid in the sun.

Liquids. From a gutter leading from the sink, all of the suds (using one and one-half barrels of soap per year) and all other liquids from the slop pail, &c., was run directly on to this heap.

Minerals or Chemicals. Lime, ashes, gypsum or plaster of paris, and common salt were used at discretion. When it became strong and offensive to the smell, gypsum was applied; when muck was hauled in, lime and ashes were used. Aside from what the hogs rooted and pulverized, it was shoveled over about the middle of September. For several years past I have made similar heaps in winter and summer. The effect on the crops is entirely satisfactory. This year from about four and one-quarter acres of light sandy land, only manured in the hill, one shovelful in each, I raised some four hundred baskets of round corn. It also continues in the ground better than any other compost I have ever used, of which the succeeding crops fully attest.

Statement of R. Bixby. I have on hand ten or fifteen cords of composted manure, made after the following form: I have in one corner of my barn-yard a cavity, into which I put, one year ago last November, about thirty cart-loads of swamp muck; this muck has the wash of my barn-yard and sheep-yard through the year. The first of June last, I mixed with it about one-fourth part of long barn-yard manure and four barrels of ashes, and plowed it over till it was thoroughly mixed, leaving it about one foot in thickness. About the first of September I mixed plaster with it, and shoveled it over, leaving it about three feet thick. This heap lay till the last of October, having become completely pulverized, then it was hauled into the field and deposited in one large heap, ready to be used in the hill for corn in the spring.

I also, in my hog-yard, manufacture about four cords of manure, (my hog-yard is covered and has a plank floor); into this yard is thrown all the grass roots and weeds from the garden, all waste matter from the house, old boots and shoes, bones, woolen rags, and excrements from privy. This, with the manure from the hogs, is well mixed by them, for they never leave a sod unturned.

Dairy Produce.

J. M. Wood's dairy "consists of cows which are a cross between the Durhams and Devons. During the winter feeds as usual, and in the spring adds oats and potatoes. He finds feeding on pumpkins makes a difference in the quality of butter. Average yield of butter per cow is about one hundred and seventy-five pounds."

William B. Merry has a dairy of grade Durham cows. He sets his milk in tin pans, about two-thirds full, in a cellar made as light as possible and well ventilated. Does not wash his butter, but is careful to remove all the buttermilk, and pack it solid in tubs made as near air tight as possible. In the manufacture of cheese, after the curd is chopped fine, "I take one table-spoonful of salæratus, dissolve it in a tea-cupful of boiling water, and turn it over the curd, then two-thirds of a tea-cupful of fine salt, which I thoroughly mix with the curd, and put to press forty-eight hours, turning it twice in the time. This is to make a cheese of twenty pounds."

Bread and Honey.

Samuel W. Tinkham, of Anson, presented brown bread, wheat bread and honey for premium. The material for the bread was all produced on his own farm. In producing honey no artificial feed is used. The bees are kept in Titcomb's patent hives, from which the honey is removed without destroying the bees.

Laura A. Mitchell presented a specimen of wheat bread, made as follows, viz.: "Take three-fourths new milk, and one-fourth warm water, thickened with flour like yeast, after which keep it as warm as new milk until it rises considerably, then stir it up again, adding more warm milk and flour, till it is quite stiff, then let rise ten minutes and bake it in a quick oven."

NORTH SOMERSET AG. SOCIETY.

Amount of premiums awarded, . . .	$180 10
Printing and expenses of show, . . .	40 53
	$220 63

John Gray of Embden, exhibited grade Durham cattle, which he prefers as most kind and docile, and decidedly the best feeders.

C. Baker of Bingham, thinks Durhams to be hardier and better to keep on poor feed than natives.

J. French, Jr., prefers them for superior build and toughness.

Nicolas Smith prefers them for size.

Samuel C. Hunnewell of Solon, prefers them as superior to others for stock.

Simeon Goodrich thinks Durham the hardiest breed.

Eastman Hathorn of Solon, and Allan Heald of Bingham, prefer them for build, strength and size.

John C. Barnes commends them for size and symmetry, but thinks there is little difference in disposition from natives—that this is owing to mode of rearing and management.

Pickard Goodrich of Bingham, exhibited Devon oxen, and prefers them for strength and beauty—for work and for beef.

Edmund Coolidge exhibited native cow giving in June and July sixteen to twenty quarts milk per day.

Zachariah Williams of Embden, exhibited stallion of Messenger breed, which he prefers for size, strength, speed and docility.

Joshua Gray of Embden, exhibited stallion of same breed, which he prefers for speed, strength and endurance.

John Cragin of Embden, prefers the French Merino sheep as "larger and hardier than the Spanish, and better adapted to our climate, and much heavier shearers."

John Pierce, Jr., of Embden, exhibited sheep, some one-half French Merino, and some grade South Downs; prefer the first for fineness of fleece, and the others as rearing their young well, and yielding fair fleeces and good mutton.

He also showed swine, a cross of Berkshire, Newbury White, and Suffolk breeds, which he commends as large, good, and easily kept.

Mrs. E. Hathorne with dairy of five cows obtains one hundred and fifty-two pounds of cheese to each during the warm season.

Nicolas Smith harvested one hundred and eighty bushels potatoes per acre on burnt land with no manure applied; plowed six or eight inches.

E. G. Savage harvested one hundred and ninety bushels potatoes per acre on light, sandy loam, broken up the previous year; plowed ten inches; thirty loads manure applied and top-dressed with plaster and ashes; using fifteen bushels of cut potatoes for seed.

Nicolas Smith raised twenty-one bushels Scotch Fyfe wheat per acre, sowing broadcast one and three-fourth bushels per acre, soaked in strong pickle, May 27th, on light, yellow soil; plowed ten inches deep; planted to potatoes last year and manured in hill; cut 1st September quite ripe; cost of cultivation and value not given.

E. G. Savage harvested one hundred and eighty bushels ears of corn per acre, on light, sandy loam; planted to corn the previous year, and manured in hill; plowed in the fodder six inches deep; no manure this year, except top-dressing of lime and ashes before hoeing, cost $3; cultivated and hoed once; rows three and a half and hills one and a half feet apart; cut up at roots September 24th to October 1.

John Dinsmore on a light, sandy loam, lying on sandy clay, harvested one hundred and forty bushels ears of corn per acre; a mixture of North River and Canada eight rowed; land plowed six inches, and manured with twelve carts loads put in the hills; was in corn the year before; rows three and a half, hills three and a half feet asunder; cut up by the roots September 15th; no items of cost or value given.

J. S. McIntire obtained a premium on garden vegetables grown on sandy loam, worked ten inches deep, with twenty-five loads new manure applied per acre; usual culture, weeding, &c.

KENNEBEC CO. AGRICULTURAL SOCIETY.

This Society expended in premiums and expenses the present year, $499.

LIVE STOCK.

The reports on live stock generally notice the large number and fine quality of animals exhibited, and the committee seem to have been not a little embarrassed in deciding upon those most worthy of premium, and give the impression strongly that old Kennebec still sustains her enviable position of being in the foremost rank in this most important department. But the reports and statements give little information on *points of general interest* to the agricultural community. What is found is here appended.

Messrs. J. & E. Wardsworth of East Livermore, received first and second premiums on full blood Durham bulls.

J. H. Underwood of Fayette, obtained premium on full blood Hereford bull. He also exhibited other animals of this breed, and says of them that they combine better than others the qualities of work, beef and milk and are more easily kept. The committee speak highly of a bull calf of his, a cross of Durham and Hereford; also of an animal of the same cross, shown by Willoughby Clough of Mount Vernon.

Greenleaf Davis says of a cow, a cross of Ayrshire and Durham: "we weighed the milk for seven days in June, and found she gave two hundred and twenty-five pounds. Her milk for seven days in May, made ten pounds of butter." He prefers this cross for stock and milk.

Alden Lane prefers grade Durhams, as possessing the best combination of good qualities; showed a cow which averaged twelve quarts per day, during the season, and gave twenty quarts during June and July. The breed not stated.

Daniel Craig showed a heifer which had a calf in March which sold for $10 at six weeks of age. He says: "I have not milked her long enough to tell what she will make; but she bids fair to be the best milker I ever owned. In June and July she gave about twenty quarts per day; since the first of May she has averaged twelve quarts per day. I feed in winter with hay, potatoes or oil meal. I fed the mother with oil meal in addition to hay, which I regard good feed for cows before they calve." The breed not stated.

Mr. Craig also presented a full blood Suffolk boar for exhibition, fourteen months old, raised by himself. He regards this as very superior to cross with larger and coarser breeds. They take fat easy, are very hearty, and their pork is fine grained and thin skinned. He feeds with potatoes boiled, skimmed milk, with some meal and bran, and have a little dry corn.

He also raised and exhibited a breeding sow, a cross of the Bedford and Newbury White, sixteen months old. This breed, he says, mixes well with the Suffolk. He feeds her on the waste from the house, with a little meal three times a day. In the winter he gives a warm pen with a dry bed of straw, and feeds three times a day. Mr. Craig also presented a fat hog eighteen months old, weighing six hundred pounds, live weight, and five pigs five months old, averaging about three hundred pounds each, live weight. They are all part Suffolk. The pigs were taken from the sow when six weeks old, after which they were fed on skimmed milk and meal three times a day, always warm. The five pigs have eaten fifty-one bushels of corn meal beside the skimmed milk. The corn was worth eighty-five cents per bushel.

S. N. Watson presented for exhibition, a half blood French merino buck and ewe, five and one-half months old. He prefers this breed on account of the large size of their bodies, the fineness of their wool, and the great weight of their fleeces. They were bred by Ephraim Cragin of New Portland. He feeds on hay, with carrots, occasionally.

"The buck which I enter for premium was sired by a full blood French merino buck, from the sheepfold of John A. Tainter of Hartford, Conn., which took the first premium at the State show at Gardiner, last year, and the county show at Madison. The buck which I enter was weaned in August, on grass, without provender, is five and one-half months old. The mother was a grade American merino. The ewe is the same blood. Half blood ewes last spring, sheared eight and nine pounds per head, washed wool."

FROM THE REPORT ON BUTTER.

The committee on dairy products examined twenty-one entries of very nice butter, the quality and appearance of which, we venture to say, cannot be excelled by the most celebrated dairy districts in our country. Some few lots, however, had the usual objections, of being a little too hard salted. Had this objection been removed, the same butter would be entitled to a premium. The idea existing with many of our dairy women, that salt will preserve butter is a mistake. Butter will keep just as long, and just as sweet without salt as lard, if no other substance is incorporated with it. Butter should be worked until absolutely free of all butter milk or particles of sour curd, and then just enough and no more, salt added to make it palatable, and if packed in a sweet tub or stone jar and just so long as the air is excluded, the butter will remain sweet. It is gratifying to the committee to report, that evidently there is a growing improvement in this very important branch of our agricultural interest.

REPORT ON CROPS.

The past season has been one of singular results in regard to most of the crops cultivated among us. The spring and summer were propitious to the germination and growth of seed, and the good growth of almost every kind of vegetation led the farmer to anticipate an abundant harvest. In this he was much disappointed, for notwithstanding the good growth of the crops, the rains and fogs of the latter part of the season, injured them very much, and the harvest was in most cases very light indeed. This we consider the reason why there were so few entries made for the premiums which were offered on the various crops.

There were no entries for premiums on wheat, corn, rye and oats. Three competitors appeared for premiums on barley, viz.: S. N. Watson, of North Fayette; S. H. Richardson of Readfield; and Samuel G. Fogg, of Readfield.

According to the statements of each, their respective crops were as follows: Mr. Watson harvested from one-half acre, twenty bushels, and Mr. Fogg harvested from one acre thirty-seven bushels.

Mr. Richardson is not so full in his statements as we could desire, as regards the expense of the crop, but as it appears that he was successful in obtaining the largest crop per acre, (46 bu.) we feel bound to award him the first premium. To S. N. Watson we award the second premium.

But few competitors have come forward for premiums on root crops. The return of the potato rot has been exceedingly disastrous to that crop, and no one applied for the premiums offered.

The premium on carrots we award to S. N. Watson, of Fayette, for his crop of eighty bushels on one-eighth of an acre. We also award him your premium on ruta bagas of eighty bushels on one-eighth of an acre.

These crops would not have been considered extra in common years, but considering all the disasters of the season to crops in general, we think it doing very well. Your second premiums on these and other crops of the kind, have not been awarded, for the reason there was no competitor worthy to take them.

S. H. Richardson entered for premium one-half acre of barley. "I sowed one bushel and a half on ground planted to potatoes last year; plowed to the depth of ten inches; spread on six cartloads of manure last spring, and plowed it in; harrowed it well, then sowed my seed and harrowed again and rolled it; I gathered twenty-three bushels of barley. I should judge my hens destroyed nearly two bushels before it was cut."

Statement of Samuel G. Fogg. "I present to you a statement for a premium of one acre of barley, sown on greensward land, plowed the 29th day of May, and four cords of compost manure made of muck and the droppings in the yard spread on the furrows and well cultivated in. I sowed two and one-half bushels of barley on one acre, the second day of June, and harvested thirty-seven bushels of good nice barley therefrom the present season."

S. N. Watson entered for premium on half an acre of barley. It was sown on a loam, light and friable, of a dark yellow color, and about two feet deep, with a hard and gravelly subsoil; was broken up late in the spring of 1855, and six loads of stable manure applied to half an acre, and plowed in about eight inches deep, harrowed and rolled. The seed was of the six rowed variety, sowed broadcast, at the rate of three bushels to the acre. Sowed May 9th, and harvested July 28th. He cuts his grain soon after it is full in the milk, but owing to the weather this was riper than he wishes to have it when cut. Produce, twenty bushels to the half acre, or forty bushels to the acre; three tons of straw.

Cost of crop,		$9 00
Value of crop,	$20 00	
1½ tons of straw, $4,	6 00	
	$26 00	
Profit,		17 00
		$26 00

Mr. Watson also raised one-eighth of an acre of carrots, on a loam of a dark, yellow color, light and friable, from one to two feet deep, underlaid by a hard, gravelly subsoil. It is stony, the stones being both large and small, a mixture of granite and limestone. It was planted the year before, and eight cords of stable manure applied to the acre, and plowed ten inches deep. This year one and a half cords stable manure was applied to an eighth of an acre; orange carrot seed sown June 4th in drills. Produce, eighty bushels from one-eighth of an acre.

Cost of crop,		$12 00
Value,	$40 00	
Profit,		28 00
		$40 00

Mr. Watson succeeded in growing eighty bushels of ruta bagas on an eighth of an acre of soil similar to the above; were sown in drills four feet apart, and thinned to from four to eight inches apart. He says:—"I had to plant them over four times before I could get them to stand; three times the powder bug cut them down as soon as they were up. The fourth time, which was the 4th of July, they were not meddled with."

Statement on compost. In preparing my compost manure, the material used is muck, dug a year before using, and decomposed by mixing lime slacked in brine as strong as can be made, four bushels to the cord, several weeks before using.

My cattle are tied up during the summer, and each day, as much of this prepared muck is thrown behind them as will absorb their urine. Once a week, the heap is leveled to the back side of the shed, which is sixteen feet wide, covered with muck, and wet with water from the wash-room, with occcasionally a coating of plaster.

Lime and ashes should not be used with rich manure.

I have a space under my stable floor, some three feet deep, which I fill with muck and exchange once a year.

Of this manure I have made, with four cows and a horse, forty loads of forty-five bushels each, from the 1st of June to the 1st of November.

H. PARLIN.

East Winthrop, December 8th, 1856.

SOUTH KENNEBEC AGRICULTURAL SOCIEY.

Amount awarded by Committee, 1856.

Horses,	$105 00
Bulls, Cows and Heifers,	65 00
Working Oxen,	58 00
Fat Cattle,	20 00
Town Teams,	27 00
Plowing,	12 00
Sheep, Swine and Poultry,	40 00
Butter, Cheese and Honey,	25 00
Crops,	88 00
Ladies' Riding,	75 00
Fruits and Flowers,	30 00
Household Manufactures,	14 00
Implements, Vegetables and Sundries,	84 00
	$643 00

Ruta Baga Turnips.

Statement of Nathan Foster, of Gardiner. The premium was offered for the best half acre of ruta baga turnips; my crop grew on ninety-six square rods, or five-eighths of an acre, and the produce was five hundred and twenty-eight bushels—equal to eight hundred and eighty bushels per acre. As an acre was plowed and harrowed in the plot, a part of which was appropriated to the turnip crop, I give the cost per acre in the following account:

	Dr.		Cr.
To plowing and harrowing,	$10 00	By 880 bu. at 25 cts.,	$220 00
		Deduct cost,	58 00
Manure (225 lbs. guano, 4 bushels plaster, and 200 lbs. sup. lime,)	12 52	Leaves,	$162 00
Seed, 1 lb.,	75		
Labor applying manure and sowing seed,	1 48		
Hoeing,	11 25		
Harvesting,	12 00		
	$58 00		

I have estimated the whole crop at twenty-five cents per bushel, what I think them worth for feed, though I have sold a part for thirty-three and one-third to forty cents.

The piece of land taken for this crop is mostly a low clay soil, resting, at the depth of ten inches, on an impervious clay subsoil, on one side rising to a higher yellow, sandy loam, which embraces one-fourth to one-third the piece, and all originally very stony; many large stones have been taken out for building purposes. It had been mowed for a series of years, some of it more than twenty, without plowing or dressing.

After making clean work in removing stones, I dug and put down a stone drain through the lowest part of the piece, with several branches from points most liable to be overcharged with water. (This is the beginning of what I intend shall terminate in *thorough draining.*) Most of the piece was so low and wet as to produce an inferior quality of hay, and be denominated "swale" or "swail," I suppose, for want of a better term, not being exactly "bog."

It was broken up about the middle of June, as deep as the plow I used would turn, which was not more than ten inches where there was no obstruction. It was harrowed as fine and level as the character of the surface would admit, and marked for the rows, three feet apart, with a chain drawn by hand. Into the furrow made by the chain, the manure (the guano and plaster mixed) was sown by hand from a basket carried between two men, each sowing a row, and one sowing the seed while the other replenished the basket; the whole was then harrowed twice over lengthwise of the rows, with a harrow drawn by a horse, to cover the seed and mix the manure with the soil.

The sowing was done on the 22d of June, and as the ground was quite dry at the time, I had fears the seed would not germinate. Two days after, on the morning of the 24th, a heavy dew having fallen, I repeated the harrowing. The seed came up well. The after culture consisted in twice hoeing, using a cultivator between the rows at each hoeing. Between the hoeings, about 20th of July, a bag of super-phosphate of lime was sown between the rows, and worked in with the cultivator. The repeated use of the cultivator kept the ground between the rows perfectly clear, and as it was run near the plants, the hoeings consisted in little more than thinning them out. No transplanting was required.

The harvesting was done the first of November. In the morning while the tops were frozen, they were cut off with sharp hoes while the root was in the ground. The tops were then collected into heaps with manure forks. Having a piece of the neck or stem attached, they were taken up in this way without waste, and being done before the roots were disturbed, were without dirt. Tops taken off in this manner, if hauled under cover while frozen, will keep a long time, and are valuable feed for fattening cattle. The roots were turned out of the ground with hoes, and thrown into ridges far enough apart to pass between with a team. From the ridges they were thrown into the cart, hauled to the cellar, dumped and thrown into the bin; taking care at each handling to take one in each hand and strike together such as have small roots or dirt adhering to them. By this rough handling they became well cleared of fibres and dirt by the time they arrived at the bin. No danger is to be apprehended from rough handling. They never rot in consequence of it. The only fear of rot is from heating in the bin; and to avoid this, should not be put in large bodies, especially, not be piled high. They may be thrown into heaps, and into the cart, with as little care, and with as much despatch as stones, without fear of injury.

Now I am ready to give a yankee demonstration of the comparative value of the concentrated manures, so far as used in this experiment. I *guess* that double the cost of the manure applied to this crop, to wit, $28, expended for labor in hauling and applying such stable manure as is sold at $2 per cord within three-fourths of a mile from my place would not have given me so heavy a crop as was produced with the manures used; and that quantity of stable manure would have cost me, besides hauling, $30. If guessing is proof, this experiment shows that it is better to buy guano, super-phosphate and plaster at present prices, than to take stable manure at the distance of three-fourths of a mile, and have half the labor of hauling and applying performed gratuitously.

As to the value of roots, my opinion is formed from considerable experience in feeding neat stock. I think people who pay $14 or $15 per ton for roots, pay more than their actual value as compared with the prices of stock, or of other feed; twelve and one-half cents per bushel was all they were formerly worth to feed to beef cattle or growing stock. I do not believe that at times when beef sold in this section at $3 or $4 per hundred, and store stock at proportionate prices, the producer received in the form of beef and growth of stock twelve and one-half cents for roots or fifty cents for corn fed to cattle; neither do I believe, that now, when beef and stock has advanced one hundred per cent., and feed in the same proportion, that they receive twenty-five cents for roots and $1 for corn. At these prices they must look for a part of their remuneration in the increased quantity and improved quality of the manure heap.

This last consideration is one to which farmers do not generally attach sufficient importance. If farmers would raise roots (I will not quarrel about the kind, though I have decided preference,) in sufficient quantities as to allow each of their store cattle a peck a day during the whole time they are kept on dry food, and enough in addition to put such animals as they want to dispose of in the highest condition for beef, the improved condition and increased value of their stock, together with the increased number they will be able to keep on the same acres, I have no doubt would largely increase their income above that from feeding wholly on dry food. By this means all the coarse fodder, straw, meadow hay, cornstalks, &c., may be eaten clean, and stock kept in good condition. My fodder is often eaten so close that there is not sufficient waste for bedding for a single horse and a hog or two. Some twenty or more years ago, having a short crop of hay, I kept four cows from the commencement of the foddering season till into April on wheat straw with a peck of ruta bagas a day to each cow; and they were in better condition in the spring than I have ever been able to have them when wintered entirely on hay. I have been equally successful in keeping young stock in the same manner. Young cattle that were thin in the fall, coming out so as to be tempting to the butchers in the spring. I have repeatedly had offers from butchers for young cattle and store cows in early spring, when the stock wanted had been kept, up to the time, on straw and turnips alone. I consider them the cheapest and the best feed a farmer can raise for making beef,—four bushels of ruta bagas are worth more for me to feed to beef cattle than a bushel of corn meal. Still there are practical farmers who say they are not worth feeding to stock; and scientific men put them down as possessing very little nutritive matter—much below potatoes, carrots or beets. So wide a difference between their conclusions and my own, I can account for only in one of the three following ways, viz: either those farmers raise, and the men of science have analyzed a different kind of Swedish turnip from that I have raised, or they are entirely wrong in their conclusions; or their effect on my stock must be accounted for something on the principle that neighbor W—— drank the rum—"*not because he liked the taste of it, but because it makes the water taste so good:*" not because they do them any good, but because it makes the hay benefit them so much.

Of all the root crops I think the Swedish turnip is best adapted to common farm production for stock feeding. It can be produced cheaper than any other root, except some of the lighter kinds of turnips, as the Cow Horn and Norfolk. I consider it of more value by measure than carrots, and equal by weight, (being some ten or fifteen pounds to the bushel heavier,) and more nutritive than potatoes or the coarse beets often recommended so highly. It keeps better than any of them. It can be raised on any kind of land capable of being plowed and fitted for any crop. It thrives equally well on all kinds of manure, provided there is enough of it; and what I consider still more in its favor, is that it does best on recently broken greensward, and gives the ground the best preparation for succeeding crops of grain and grass. It is seldom that a farmer can hoe the same piece of land more than one year without neglecting some other portion of his farm. Carrots and beets require the land to be previously tilled and made fine—made by previous culture fit to lay down to grass—and when that is the case, it should generally be done on farms on which stock is kept; for hay is the Maine farmer's great crop; all his operations should be aimed at increasing its quantity, and the raising of turnips and feeding them on the farm, I look upon as the most effectual means of doing it. Not only is the fine and clean condition in which the land is left for following crops, to be taken into account, but I think it established that no crop, if used on the farm, returns so great an amount of nutriment for future vegetation. Land manured and otherwise treated so as to be capable of producing sixty bushels of corn to the acre, will produce six hundred bushels turnips; if in condition to produce one hundred bushels of corn, it will produce one thousand bushels of turnips at about the same cost in labor, and is an equally sure crop.

Soon after the "potato disease" made its appearance in this section, I gave public expression to the opinion that it would prove a blessing to the valley of the Kennebec. I hold that opinion still, though farmers are slower in placing themselves in a position to receive the blessing than I thought they would be. My expectation was that the ruta baga would take the place of the potato as a field crop, and be extensively cultivated; and as there was no market for them abroad, they would be used at home, and the cattle made fat, the farms made rich, and the farmers made glad. This I think will be an improvement on the system of depletion formerly practiced by exporting the fat of the land, potash and other constituents, to Boston and "along shore" in the form of potatoes.

Statement of Moses True. I, Moses True, of Litchfield, hereby certify that from one acre of ground I, this season, have raised eighty-one and one-half bushels of corn, ascertained by measure when well dried, on the 27th day of November, A. D. 1856.

The soil was of a sandy and gravelly upland, inclined to the South. Cultivated last year with corn and potatoes, with a small quantity of manure in the hill. Previously, for some eight years, mowed without any dressing. Plowed in the fall, and also in the spring, about six inches deep. Spread about five and one half cords of green barn manure before plowing. Put on about four and one-half cords of muck and old manure, about one-third of which was muck. Seed, King Philip corn, and from five to six kernels in the hill. The manure was covered to the depth of about one inch before the corn was dropped. Planted May 23d, and covered about two inches in depth. Before the first hoeing put on about six bushels of unleached ashes. I went through the rows one way with a cultivator, and the hills slightly elevated about the 15th of June. Second hoeing about the fourth of July. The rows about three and one-half feet, the hills about three feet apart. The rows run north and south. Topped the stalks about the 20th of September. Harvested about the 20th of October, and it was immediately husked and put into the crib.

I also raised on same ground four and one-half bushels beans, and one load of pumpkins. Our work was principally performed with oxen and men. Ox work, in days, three and one-half. Horse labor, one day. Some boys' labor. The amount of labor I compute at eighteen days.

Statement of A. & W. True. We hereby certify that from one acre of ground, we this season have raised eighty bushels of corn, ascertained by weight when well dried, which was done on the 24th of November. The soil was a dark rocky loam—upland—slightly inclined to the east. For twelve years previous to last spring, was cropped with grass without top dressing. In the spring of 1855, it was turned up and planted to potatoes, after light dressing in the hole. On the 19th of last May, we plowed it once to the depth of six or seven inches—then harrowed and cross harrowed with an ox harrow. We then furrowed it one way with a light plow and horse, and cross marked, east and west with chains, making the rows three feet each way. Six cords of long stable manure were spread on and turned under with the plow. Three cords of old barn manure were put in the hole. We used for seed the "large Dutton corn," from five to seven kernels to a hill. The manure in the hole was first covered to the depth of an inch. May 22d we planted the corn, covering to the depth of two inches. When the corn first broke the ground, we put on eight bushels of ashes and a small quantity of lime. We went through the rows each way with a cultivator and made slight hills with the hoe on the 10th of June; went through the same process again June 26th. It received no other cultivation, except pulling a few weeds in August. Topped the stalks September 13th. Harvested about the 15th October. It was immediately husked and put in the crib. Our work was principally performed with oxen and men. Ox working days, six; horse work, two days. We had a boy four days; the manual labor we compute at twenty days work.

Nathan C. Prescott, of South Gardiner, certifies to a crop of corn, grown on rather dark colored clayey loam, resting on clay subsoil; corn and peas having been grown on the same without manure the previous year, the land having never been plowed before that. It was plowed ten inches deep, harrowed, four cords of half old and half new stable manure being applied, and a spoonful of plaster, all put in the hill; planted 12th and 13th of May with eight rowed yellow corn, with no previous preparation of seed, the rows three and one-half feet apart, hills two and one-half feet. Top dressed middle of June with two and one-half bushels of plaster, and when ripe cut up at roots. Produce sixty-five bushels to acre, weighing sixty-two pounds to bushel.

Cost; manure,	$6 00	Value; 65 bushels at 90 cts.,	$58 50
Plowing and planting,	8 00	2 tons fodder,	8 00
Plaster,	70		
Applying same,	75		$66 50
Twice weeding,	4 00	Deduct,	28 95
Plowing and ½ hilling,	4 50		
Harvesting,	5 00	Balance,	$37 55
	$28 95		

Statement of N. Foster, Gardiner. Nathan Foster certifies to a corn crop grown on a yellow sandy loam, stony, and lying on a clay subsoil, at a depth of fifteen to eighteen inches, coarse at commencement, but by working become light and friable—had been in grass for a series of years, was plowed ten inches deep, harrowed and furrowed at a cost of $9 per acre; six cords compost composed of vault manure and tan was applied in the furrows before planting; cost of the same was the labor necessary to get it, viz: fifteen days of men and oxen, say $22.50; sixteen quarts of eight rowed seed used without preparation; distance between rows three and one-half feet; between hills, two feet; cultivated and hoed twice at a cost of four days labor for first, and three for second; about middle of July, applied one hundred and fifty pounds super-phosphate of lime between rows of a part of the piece, and used a horse and cultivator a third time. Top stalks cut and used for green fodder; harvested middle of October; have tried cutting at roots and cutting off tops; thinks it makes no difference in value or amount of crop. "If I need the stalks for use in a green state, I cut them as fast as I use; if not, I cut up at the roots at the proper time, thinking the fodder better in this way than to cut and dry separate; fifty-eight bushels corn, and some pumpkins; corn sound and heavy; none weighed; stalks I judge, would weigh three tons, as usually cured."

	Dr.		Cr.
Plowing and harrowing,	$9 00	58 bus. corn, 90 cts.,	$52 20
Seed,	50	Stalks,	12 00
Dropping manure and planting,	6 00	1 load pumpkins,	2 00
Hoeing,	10 00		$66 20
Harvesting,	8 00		60 00
	$33 50	Net proceeds,	$6 20
Cost of manure,	26 50		
	$60 00		

Note.—If I were to add to the items of expense the cost of removing stones, the balance would be the other way; but as the whole cost of manure is charged to this crop, I must look for pay in the improved condition of the land, for taking out the stones.

J. M. Carpenter, of Pittston, applied for premium on an acre of oats, grown on a dark yellow, rather coarse, light and dry gravelly loam, on a gravelly subsoil, planted to corn last year, with six cords old barn manure applied in hill per acre; plowed eight inches, and harrowed; sowed broadcast at rate of three and one-half bushels to acre, 9th of May, 1856; cut in August, when the straw was slightly yellow; yield, thirty-nine and one-half bushels, of thirty-two pounds each, and two tons straw.

Plowing and harrowing,	$4 00	39½ bushels at 45 cts.,	$17 77
Sowing,	50	Straw,	9 00
Seed,	1 75		
Harvesting,	2 00		$26 77
Treshing,	3 00	Balance,	$15 52
	$11 25		

Michael Hildreth applied for premium for potatoes, grown on a dark clayey loam, free from stone; broken up from sward a year ago last August; plowed eight inches; harrowed twice in spring before planting; ten bushels cut potatoes planted 1st of May; rows four feet, hills two feet apart; cultivated and hoed once; harvested 1st of September; yield, 145 bushels at 42 cents, $60.90; plowing and harrowing, $5.00; planting, cultivating and housing, $16.00. Sold 75 bushels at from 50 to 75 cents.

Mr. Dow applied for premium on Illinois spring wheat sowed broadcast, on a dark loam, fifteen inches deep, which had been in grass for fifteen years; planted to corn last year; plowed ten inches deep and harrowed; the seed washed and mixed with plaster, was sowed 9th May, one and three-fourths bushels to acre; harvested in August, when the grain could be jammed between the thumb nails; crop, nineteen bushels to acre.

Cost; plowing and harrowing,	$4 00	Value of wheat,	$50 00
Seed,	5 25	“ straw,	5 00
Harvesting,	3 00		55 00
Thrashing,	3 00	Deduct,	15 25
	$15 25	Balance,	$39 75

Michael Hildreth applied for premium on oats, grown on a fine dark clayey loam; planted to potatoes last year; this year plowed eight inches, harrowed, no manure added; sowed three and one-half bushels to acre, May 1st; harvested end of August, as soon as it was yellow.

Crop; 53 bushels of 33 pounds each, worth 45 cts.,	$23 85
2 tons straw, ...	4 00
	$27 85
Expense; raising, harvesting and threshing, .	$7 25

Mr. G. Blin applied for premium on crop of Java wheat, grown on gravelly loam, resting on hard gravelly pan, light and easy when dry, stiff when wet; had been twelve years in grass; broken up in 1855 and planted to corn; no manure applied the present year; two bushels seed per acre sowed dry May 22d, 1856, broadcast; harvested September 21st, the grain a little hard. 16 bushels by measure per acre; weight 60 lbs. per bushel.

	Dr.		Cr.
Plowing,	$3 50	28 bushels wheat, $3,	$84 00
Harrowing and sowing,	2 00	2 tons straw,	10 00
Seed,	14 00		$94 00
Harvesting,	3 00		
Threshing and winnowing,	8 40		
	$30 90		

Scraps gathered from Statements.

S. S. Ayer of Pittston, and B. W. Keene of Windsor, prefer grade Durhams for beef and labor.

Martin Metcalf regards Durhams as superior to others as being tough and docile—good for working and for milk in an eminent degree.

D. Lancaster prefers grades to full bloods, as the latter require extra feed and care, and the natives are too small and often ill-formed.

J. T. Smart says of a Durham cow which he offered for premium:

The cow which I offer to the South Kennebec Cattle Show, dropped her calf January 8th, which I gave away; the man gave me $4 to keep the calf until it was three weeks old. Made fifteen pounds of butter which sold for twenty-five cents per pound, from the time the calf was taken from the cow up to October 7th. Sold twenty-three hundred and three quarts of milk at five cents per quart, $115.15. Milk used in our family, one and a half quarts per day, four hundred and five quarts at five cents, $20.25.

Cash received for calf,	$4 00
" " " butter,	3 75
" for milk sold,	115 15
" for milk used in family,	20 25
The whole proceeds for nine months,	$143 15

J. T. Smart.

Farmingdale, October 8th, 1856.

Aaron Hoag exhibited grade Ayrshires which he thinks extremely hardy, and will keep in better condition on same feed than any other of the improved breeds; very kind also, and easily trained; a three years old heifer has given for thirteen and a half months an average of twelve quarts of milk per day.

Wm. S. Grant of Farmingdale, commends Jersey cows as very docile and superior to others for richness of milk.

Nathan Foster of Gardiner, exhibited a cow, three-fourths Durham, of which he says: "I prefer this breed to most others on account of their superior size, early maturity, mild and docile disposition; and this particular family on account of their excellent dairy properties."

W. S. Grant prefers the "Durhams for stock, as combining more good qualities than any other."

Mr. Elijah Pope, of West Gardiner, offered a cow three-fourths Ayrshire, five years old in May of this year, 1856, which had a calf on the 30th of May. In one week in June following, her milk weighed two hundred and sixty-eight pounds. In one week in the next month, her milk weighed three hundred and five pounds. In one week in the third month, her milk weighed two hundred and eighteen pounds. From her milk in these three weeks, forty pounds of butter were made. Seven quarts of her milk, given at night on the 29th of September, made one pound of butter. Mr. Pope has another cow, principally of the Durham breed. From the milk of these two cows during four months, from the first of June onward, four hundred and twenty-five pounds of new milk cheese were made, and one hundred and twenty-four pounds of butter.

SWINE.

Geo. Brown says of grade Norfolks, that they make hogs of four hundred to five hundred pounds, fatten easily and are quiet; the pork better than Norfolk, the animals larger than Suffolk alone.

Aaron Hoag of Gardiner, says of his cross between White Chester and French boar, that "their combined qualities are superior to all others;" challenges the State to produce a better; says "the above breed knocks everything else in hogdom higher than Gibraltar."

J. Higgins of Farmingdale, commends a cross of Suffolk and Mackay, as peaceable, cheaply kept, and will fatten on raw roots.

SHEEP.

James Gould of Pittston, and Jesse Higgins of Farmingdale, prefer cross of "Leicester and Merino for size and mutton."

HORSES.

W. S. Grant of Farmingdale, describes his stock horse "Rising Sun," as from an English mare by an English blood horse—commends him for size, speed, mild disposition, and a getter of good stock.

F. L. McGowan showed one got by Rising Sun, as "of great endurance, good style and great speed."

Nathan Foster commends the "Messenger" stock "on account of their rapid and easy gait, great endurance and longevity."

B. W. Keene of Windsor, the same as "peaceable and easy to manage for family use."

E. F. Dunn, same "for kindness, docility and speed."

W. L. Mitchell, Litchfield, "Morgan and Messenger;" for "speed and docility—gentle and kind, beyond all others."

W. W. Thompson, the same for "docility, speed and endurance—more free from lameness and disease than others."

Samuel Lane—the same for "docility, power and speed."

J. W. Edmunds—same for "size, beauty and speed."

E. F. Masson—Bush Messenger breed, for "size, speed and durability."

H. Butman, Gardiner, commends "Hiram Drew" breed "for docility, speed and endurance, kind and fast walker."

Moses King Pittston, the Black Hawk, "for large growth."

Charles Milliken, Indian ponies "for speed and great endurance on road," and the Black Hawk "for speed."

W. Goodspeed, Moscow and Messenger as "draft horses."

Lot Goddard, Messenger and French, for "speed and ability to perform hard service on poor feed."

RURAL LIFE.

A Poem read at the Annual Exhibition of the South Kennebec Agricultural Society, October 9, 1856, by C. F. Dunn, Esq., of Litchfield.

Of rural life and all its charms I sing,
The stern cold winter, and sweet welcome spring;
Summer's effulgence, autumn's gentle reign,
Of suns that heat, and showers that cool the plain,
These be my theme. Oh, come! ye tuneful nine!
Inspire my lay, and weave the harmonious rhyme;
Make me to feel deep in my inmost heart,
Those blissful feelings rural scenes impart.
And now old Boreas, on his icy throne,
In storms and tempests reigns supreme, alone;
His snow white mantle on the earth he spreads,
Or piles his drifts far, far above our heads;
The ponds and streams in solid crystal binds,
And from their prison frees the howling winds;
Rain, hail and sleet, obedient to his call,
In fury drive, or gently freezing fall.
And does rude winter yield us no delight?
Or is his reign the reign of death and blight?
Are there no charms then in the country found?
Yes! there are many, pleasures real and sound.
When hill and plain with snow are cover'd o'er,
And the fierce tempests round our dwellings roar;
When all without is turbulence and strife,
Within, our cots with warmth and joy are rife.
Our books and papers yield us true delight,
And the best time to read is on a winter's night.
And is there, can there be more solid joy
Than gaining wisdom? Study hard, my boy,
And you will find, in time to come, your pay
Is all your heart could wish,—it never will decay.
Stern winter also other pleasures yields,—
The boys on sleds slide bounding o'er the fields;
And on the ice, the skaters circling round,
Enjoy the sport delightful,—pleasure there is found.
Pleasant it is, too, on a bright, fair day,
To wrap up warm, and ride out in your sleigh;
The jingling bells, the cool, brisk, bracing air,
The lovely face beside you, tells of pleasures there,
Pleasure we find and ever true delight,
E'en in stern winter, if the heart be right.
But winter's past,—the zephyrs mildly play,
And the sweet songsters tune their joyful lay;

The bursting buds, the springing graces tell
Of the delights which in this season dwell.
The air is balm, sweet odors fill the breeze,
Sweet strains of music all our senses please.
Now is the time to plow, to plant and sow,
And some do say to hunt and shoot the crow.
But let me ask, is it a wholesome way,
The feather'd gentry thus to hunt and slay?
Do they not do more good than they do harm,
Eating the worms and bugs and vermin on your farm?
Just string your corn, or fix up some odd thing,
And let them live, more good than hurt they bring.
How happy they who in the country live,
And taste the joys that rural pleasures give;
Breathe the fresh air, the lovely landscape view,
And feel its beauties ever new.
The ear ne'er tires, the sight is aye entranc'd,
The lovely scenes by viewing are enhanc'd;
The mild, warm sun, the gently falling showers,
The expanding leaves, confess thy genial powers.
But now the sun has gain'd his northern bounds,
And quickening nature with fresh beauty crowns.
The modest violet, shrinking from the sight,
The gorgeous rose, in all her beauty bright;
The crocus, daffodil, and fleur de lis,
Unfold their buds; 'tis beautiful to see.
Fruits, grass and flowers with fragrance fill the air,
And nature's music is not wanting there.
From ev'ry bush, from ev'ry slender spray
The wild, sweet warblers usher in the day,
Pour forth their liquid notes, and hymn His praise,
Who out of *Chaos* did the world upraise.
And now, ye farmers, take your hoes in hand,
Stir up the earth, cut weeds from off your land;
And give the corn a chance to start and grow,
It will repay the labor, you and I both know.
It starts, it grows, fresh vigor it regains,
From the warm sun and earth-reviving rains.
And now to cut the grass the time draws near,
The best and busiest work of all the year.
Now grind your scythes, and have them sharp and keen,
Then early rise, and mow both smooth and clean,
Then spread the grass, and let the bright, warm sun
Finish the work that you have now begun.
'Tis pleasant work; the swallows darting round,
Now high in air, now swimming near the ground;
And the boblincon, perched in yonder tree,
Brim full of music, sings deliciously.
A pleasant odor from the new mown hay
Fills all the air; but hold, look there, away
Far in the west, see the thick clouds ascend;
And hear the thunder; what does that portend!
A shower is near; now see the busy crew,
To rake the hay, they all their powers renew;
And now 'tis snug,—the rain is close at hand;
In large and wide spread drops it patters on the strand;

But soon collecting strength, it pours amain,
And like a deluge covers all the plain.
The thunder mingling with the wind's wild roar,
Chorus sublime! in deaf'ning peals rolls o'er
Our heads. Dost thou not fear? and feel
His awful voice in the deep rattling peal?
His voice who once on Sinai's mountain spoke
In thunder, lightning, and a thick, dark smoke?
For who the lightning's vivid blaze can stand,
And feel the thunder shake the affrighted land;
And not acknowledge in his inmost soul
That weakness—impotence—all his powers control?
But see, the shower has passed, the sun his rays
Again pours forth, and all around us blaze
The myriad gems. How beautiful the sight!
The leaves, the grass are sparkling in the light;
And the sweet songsters sing his praise again,
Who gives for all the sunshine and the rain.
But summer now her brilliant course has run,
And bounteous autumn, with a milder sun,
Begins her reign; she in our garners pours,
Of fruits and grain her full, exhaustless stores.
The farmer now his pay in full receives;
The golden corn, the full, abundant sheaves,
The luscious fruits, the vegetable store,
Which from earth's bosom he can freely draw.
All these, and more, our heavenly Parent gives,
And man, the creature, by his bounty lives.
But autumn now is passing fast away,
And her green vestures hasten to decay.
But see what beauty marks her closing hour!
How brilliant!—how superb!—her ev'ry leaf a flower.
Purple and scarlet, yellow and dark brown,
Her forest leaves are painted,—'tis a crown
Which death has given to claim her as his own,
His icy hand is on her!—autumn now has flown.

Now from all hearts let glad *Hosannas* rise,
To Him that framed the world and built the skies.
He who in mercy in his word has given
A lamp to guide our wand'ring feet to heaven.
He who in winter, when the tempest roars,
Has given us warm cots and blessed our stores;
And when the spring bedecks the verdant plain,
And the sweet warblers charm our ears again;
And when the summer, with its fruits and flowers,
Its parching heat, and cool, refreshing showers
Has glided by, then sober autumn brings
Her fruits and grain, and all her choicest things,
And pours them at our feet. And shall not we,
For all these mercies ever thankful be?
Yes, let us strive, and by obedience prove
That we are thankful—thankful for His love.

NORTH KENNEBEC AG. SOCIETY.

RECEIPTS.

Amount received from members,	$444 50
“ “ “ sale of tickets,	421 94
“ “ for rent of land for tents,	16 00
“ “ for entry fees for trotting horses,	30 00
“ due us from the State,	200 00
	$1,112 44

EXPENDITURES.

Amount awarded by committee on ladies' horsemanship,	$35 00
“ “ “ on fast horses,	81 00
“ “ “ on stock horses and colts,	26 00
“ “ on neat stock, including town teams,	81 00
“ “ sheep, $11; swine, $9.50,	20 50
“ “ poultry, $1.50; fruit, $8,	9 50
“ “ bread, butter and cheese,	16 50
“ “ household goods,	33 98
“ “ fine arts,	12 25
“ “ implements,	8 00
“ “ crops,	11 00
“ “ harnesses and leather,	3 00
	$337 73
We have paid for improvements on show ground, graveling track, making pens, &c.,	328 41
For tent for use of Society,	100 00
For incidental expenses,	125 00
	$891 14

The following remarks occur in a communication from the Secretary of this Society:

“I herewith hand you what returns have been made to me by the competitors for our society's prizes. I don't think they are remarkably interesting, or hardly worth the expense of forwarding. Our farmers are very backward about filling and returning the blanks, and their business is conducted in such a manner that their answers must necessarily be a matter of guess-work in a great measure. We had a very fine show of horses, oxen, cows and swine, a small show of sheep, a small show of implements and manufactured articles, but what we had were of a superior quality.

The third and last day of our show was entirely devoted to the show of speed horses and ladies' riding, and these called out more people than all the rest of the exhibition; this, in a pecuniary point, is what we most need, but to my mind it detracts much from the usefulness of these associations to devote so large a share of their funds and time to encourage fast horses and fast women, but I may be mistaken. Time will determine.

LIVE STOCK.

Watson W. Jones received the first premium for fancy oxen. They were a cross of Native and Durham, were raised by himself, girt seven feet and eight inches, and are four years old. Their winter feed has been a plenty of good hay, and one quart of oats per day.

H. Homer Percival presented a two year old colt, on which he received the first premium. He was a cross of the Messenger and Morgan; run with his dam till four months old, and then reared on grass. In the winter he was fed on hay and carrots; is kind in disposition, and a fast walker. "I prefer this breed, because the Morgans are hardy, compact, and capable of great endurance, and the Messengers are large in size, and generally great roadsters, and frequently very fast travelers."

Joseph Percival received the first premium on a dairy cow, which was a cross of Durham and Ayrshire, four years old. She combines the qualities of a milker and breeder in an eminent degree; gives on an average, during the months of June and July, forty-five pounds of milk per day, and her milk has yielded two pounds of butter per day through these months on grass feed. He bred her himself. She had the milk of her dam until three months old, and was reared on hay with turnips, and turned to grass in summer. The first and second winters was kept on coarse fodder, such as straw and corn-stalks, with a plenty of ruta bagas. "The Durhams are large, symmetrical, and almost uniformly docile, and the Ayrshires are free milkers, and their milk is of a very superior quality. Combining the qualities of each makes an animal nearly perfect."

He also received the first premium on a flock of sheep, consisting of two bucks, ten ewes, six ewe lambs and three buck lambs. They were Leicesters, in age varying from six months to three years. "I prefer this breed, because they are large in the carcass, come to maturity early, and the ewes abound in twins. Two-thirds of my ewes raised twins the present season, and my flock averaged nearly five pounds of well washed wool. I feed on hay, straw, &c., with turnips and carrots. Seldom feed grain. With this feed the lambs come strong, and the ewes give a large quantity of milk, and the lambs are fit for the butcher early."

Dairy Products.

John B. Stratton received the first premium on butter. His dairy consists of three cows, which are a cross between the Durham and natives. In winter he gives a plenty of good hay, and keeps them in a warm place; and in the summer in a good pasture, with brook water, aud at night sheltered. He considers a variety in the kinds of grasses in a pasture the best. He sets his milk from thirty-six to forty-eight hours, according to the temperature of the weather, always takes the cream off while the milk is sweet, and churns that alone. The cream must be churned at exactly the right temperature to secure nice butter. Wash the butter in pure spring water, and work thoroughly twice at intervals of twenty-four hours. He averages one pound per day per cow. "Salt we consider of but little account in keeping butter sweet."

Sidney Howard received the second premium on butter. His dairy consists of three cows, a cross of the natives and

Durhams, and he feeds with hay, corn fodder and straw, and sometimes a few roots. In summer his pasture being short, he gives corn fodder; thinks clover is the best grass, and hard water to drink, to make first rate butter. "I find, when my cows get nothing to drink but soft water, though they may have the same feed, the butter is softer and of an oily nature." The milk is set in tin pans, and stands forty-eight hours before being skimmed. He makes his butter with cold water, half an ounce of salt to a pound of butter is added, and it is then allowed to stand twenty-four hours, when it is well worked with paddles, and packed. Produce about six pounds of butter per week per cow.

William L. Leslie manufactures butter and cheese, on the last of which he obtained the second premium. His dairy consisted of three cows. In winter gives roots and grain in addition to hay, and in the summer they were in a pasture. He finds that clover makes butter of a richer and sweeter flavor than any other feed; churns his cream at sixty degrees of Fahrenheit, as being the best temperature. He salts the cream when taken from the milk, and the butter as soon as it is churned; makes five pounds of butter per week per cow. In making cheese, he sets the milk for curd as soon as taken from the cow; drains the curd thoroughly and presses forty-eight hours. When taken from the press, he covers the whole cheese with a thin cotton cloth dipped in butter or lard, and dresses them with butter daily till fit for market.

Crops.

The Secretary says:

"There has been the present season a smaller competition than we have had for some years. Everything has conspired to limit the interest of our farmers in this department. Crops have generally been short except the hay crop, and the season for harvesting that was decidedly unfavorable. The corn crop, though not large, is good, and the only crop that makes the the farmers reconciled to their season's operations. Large outlays were made for wheat, and also for the potato crop, and both have signally failed; and, as a class, our farmers are not remarkably public spirited, and when the prizes are small and will not pay the trouble of keeping debt and credit with their farms and crops, they have neglected to do so, and therefore the extreme smallness of the competition."

Obed Emery applied for premium on a field of corn, and obtained the third. It was planted on a dark, red loam, which was light and friable, with a hard and gravelly subsoil, and abounds in small stones of divers kinds. Manured with three cords of green manure harrowed in, and then one barn shovelful of old manure applied in the hill. Plowed eight inches deep, and harrowed twice. Planted in hills twenty-eight inches apart, and three feet between the rows. Planted the 28th and 29th of May. Cultivated and hoed twice. Harvested in September, by cutting up at the roots, when quite hard. Produce, sixty-seven bushels.

Plowing and harrowing, ...		$3 00
Manure, seven cords, ...		14 00
Seed, ...		38
Planting, ...		2 50
Hoeing, ...		3 00
Harvesting, ...		3 00
		$25 88
67 bushels corn at 90 cents, .	$60 30	
Net profit, ...		34 42
		$60 30

Calvin Taylor obtained the second premium on wheat crop. It was grown on a slaty soil, very light, and about eleven inches deep, with an open subsoil. It is of a dark color, and with a few slate stones. In 1854 taken from grass and planted to potatoes, and in 1855 planted to corn, and about six cords of barn-yard manure was applied in the hill. Plowed about eight inches deep; sowed with East India wheat, April 30th, broadcast; harvested August 13th, when the grain was so hard as not to be easily jammed. Produce, twenty bushels and thirteen quarts, which weighed twelve hundred and four pounds. The straw was estimated at one ton.

Plowing,		$1 50
Harrowing,		1 00
Seed,		5 62
Sowing,		25
Harvesting,		3 50
Thrashing,		5 00
		$16 87
20 bushels 13 quarts wheat at $3,	$61 22	
Net profit,		44 35
		$61 22

Robert R. Drummond received the first premium on a crop of winter rye. It was sown on a sandy loam, of a dark color, from twelve to fifteen inches deep, underlaid by an open, sandy subsoil. It is very light and friable, and free from stone; was taken up from pasture, and plowed about eight inches deep. "Six cords of muck piled up and frozen the winter before, was spread on the piece, and thirty-five bushels of leached ashes were spread on one-half the piece. Sowed broadcast August 28th, 1855." Harvested the first week in August, fully ripe. Produce, twenty and one-half bushels of rye, weighing eleven hundred sixty-eight and one-half pounds. Straw estimated at two tons. "There was about one-fourth more rye on that part of the piece to which the ashes were applied, than on the other. There was straw enough for thirty-five or forty bushels; but for some reason, the upper part of the heads did not fill."

Plowing,			$4 00
Muck and ashes,			4 50
Harrowing and rolling,			1 25
Seed,			1 13
Reaping and stacking,			2 00
Housing and thrashing,			2 50
20½ bushels rye at $1,	$20 50		15 38
Straw,	5 00	Profit,	9 12
	$25 50		$25 50

AN ADDRESS

Delivered before the North Kennebec Society, at Waterville, October 8, 1856, by
Rev. H. C. Leonard.

Gentlemen :—You come together here to honor and dignify labor, and to show your regard for some of the great interests of the world. Your presence here upon these grounds, with this display of handicraft, cattle and horses, and the productions of your gardens, orchards and fields, is an evidence that you recognize the nobility of work, that you appreciate the value of your goodly heritage, and that you aim in your employment to present the union and harmony of utility and beauty in your results.

These characteristics which you manifest here, are eminently worthy. The first one, the disposition to honor labor, is one of the primal roots of greatness. Success, wealth, independence, spring mainly from this disposition, as the apple-tree grows and draws nourishment from the tap-root running deep into the ground. It is the foundation of a good man's character; it is the cause of his prosperity; it is the basis and the support of the thinking community, or the flourishing State.

There are many places in the world where you may see the distinct line between the thrift and respectability of labor, on the one hand; and the decay and degradation of false pride and indolence, on the other. Here, is the man who feels that he has a part to perform in life's great drama, that it is his duty to do something in the realm of work, that it is wise and honorable to employ his wits and his hands in some one of the useful callings of the world. He walks among his fellow men upright and fair in his nobleness and integrity. By the effort of his brain, and by the sweat of his brow, he earns his right to live among respectable men, and to take the good of life in places of trust and honor. There, is the man who thinks that labor is not honorable, is only the part of menials or slaves, and who is ashamed to work, or cares only to avoid the tasks which his neighbor so cheerfully performs. He takes that course which, to his superficial or inferior thought, seems the easiest, even though it leads to infamy and ruin. He shirks the higher responsibilities of life, he sinks lower and lower in the depths of sin, he shocks the moral sense of the good, he tramples upon all wholesome rules, he becomes an Ishmælite, the meanest and miserablest of men, rather than turn his mind or his hand to some useful employment. Here, is a commonwealth, impoverished in every part, poor in soil, and low in moral character, because labor is not respected, and the vices of indolence and luxury grow and rage unchecked. There, is a different realm, rich in soil, and lofty in moral character, because labor is honored, and the virtues of industry and temperance multiply and increase in strength, perpetually.

There are cases, I know, in connection with which, these distinctions are not seen,—or, in connection with which, as to outward condition, the fair show is on the side of those who despise labor. In such cases, the deep, black mark of indolence, or injustice, is on the soul. In all cases, indeed, the worst result of this sin, as of every other, is found here. So, though a man in this pride of wealth, or indolence, hold himself aloof from toil forever, and though his riches increase till he become an Astor, or a Gerard, he will not be a nobleman; he will be one of the lowest forms of humanity.

No man who works with high conceptions, or noble motives, no man, busy and faithful in any honorable calling, no honest, useful toiler, farmer, mechanic, or what not, ever feels that he is degraded by his employment; whether his task is to plow the earth, to smite the heated iron, or to sail the ship, he is conscious of the importance and the dignity of his life, and all the tyrants in the world could not make him cower, or drive him from his ground of independence.

If I am thankful for any thing, it is for this: that I was born in New England, or that I live where men attain eminence and influence, not through birth or inherited wealth, but through their own effort or labor,—where the taunt of the plantation lord, that his slaves occupy a condition better and happier than theirs, is answered in the presence of the world with noble dignity and scorn. Twenty years ago, or thereabout, George McDuffie, governor of South Carolina, asserted that the slaves of the south were in better circumstances than the workingmen of the north. Whittier, the poet, the son of a New England farmer, thus replied to this sneering declaration:

"Ho! fishermen of Marblehead:
  Ho! Lynn cord wainers, leave your leather,
And wear the yoke in kindness made,
  And clank your needful chains together;
Let Lowell mills their thousands yield;
  Down let the rough Vermonter hasten,
Down from the workshop and the field,
  And thank us for the chain we fasten!

Slaves in the rugged Yankee land?
  I tell thee, Carolina, never!
Our rocky hills and iron strand,
  Are free, and shall be free, forever!
The surf shall wear that strand away,
  The granite hills to dust shall moulder,
Ere slavery's hateful yoke shall lay
  Unbroken on a Yankee's shoulder!"

There ought not to be a man here, or anywhere else in New England, unpossessed of the spirit of these lines. Where, whichever way you turn, you behold so many monuments of noble industry, so many spectacles of busy, beneficent toil, and hear so many sounds of laborious wheels, so many notes of human activity, it should be counted a shame, a reproach, if a man be not imbued with this respect for unenslaved, independent industry; or, if he himself is a workingman, if he have not the will to dignify his vocation, or the good sense to show that he is proud of it.

There are those, perhaps, who, under the burdens of poverty, or in the weariness occasioned by over-work, complain of their lot, and wish that they might live, as they think many do, without turning a hand, or giving shape to a thought. If you know any of this class, you can say this of them, that they have begun life wrong, in not making themselves superior to all outward things; and that the hardship of their condition consists chiefly in their discontentedness, and in their disposition to murmur and repine. A brave and hopeful man can never be put down. Whatever his lot, he magnifies and glorifies his employment, and works and strives towards the ideal of his mind, with confidence and cheerfulness. Longfellow represents such a man in his "Village Blacksmith." The poet says:

"Under a spreading chestnut tree
The village blacksmith stands;
The smith, a mighty man is he,
With large and sinewy hands;
And the muscles of his brawny arms
Are strong as iron bands.

His hair is crisp, and black, and long;
His face is like the tan;
His brow is wet with honest sweat;
He earns whate'er he can,
And looks the whole world in the face,
For he owes not any man.

Week in, week out, from morn till night,
You can hear his bellows blow;
You can hear him swing his heavy sledge.
With measured beat and slow,
Like a sexton ringing the village bell
When the evening sun is low.

And children, coming home from school,
Look in at the open door;
They love to see the flaming forge,
And hear the bellows roar,
And catch the burning sparks that fly
Like chaff from a threshing floor.

Toiling—rejoicing—sorrowing—
Onward through life he goes;
Each morning sees some task begun,
Each evening sees it close:
Something attempted—something done,
Has earned a night's repose."

Wordsworth, in his "Excursion," describes a man of this noble rank, in these words:

"He was a peasant of the lowest class:
Gray locks profusely round his temples hung
In clustering curls, like ivy, which the bite
Of Winter cannot thin; the fresh air lodged
Within his cheek, as light within a cloud;
And he returned our greeting with a smile.
When he had passed, the solitary spake;
A Man he seems of cheerful yesterdays
And confident to-morrows—with a face,
Not worldly-minded, for it bears too much
Of Nature's impress, gaiety and health,
Freedom and hope; but keen withal, and shrewd.
His gestures note,—and hark! his tones of voice
Are all vivacious as his mien and looks."

In another place, in the same book, this author portrays another of this order of men, as he appeared in a season of bereavement, or when all his family had been led away from his sight, by the hand of death. This is his language:

"All gone. all vanished! he deprived and bare,
How will he face the remnant of his life?
What will become of him? we said, and mused
In sad conjectures. Shall we meet him now
Haunting with rod and line the craggy brooks?
Or shall we overhear him, as we pass,
Striving to entertain the lonely hours
With music? (for he had not ceased to touch
The harp or viol which himself had framed,
For their sweet purposes, with perfect skill.)
What titles will he keep? will he remain
Musician, Gardener, Builder, Mechanist,
A Planter, and a rearer from the Seed?
A man of hope and forward-looking mind
Even to the last! Such was he, unsubdued."

These reflections from these men of thought and insight, bring to view the characteristics of the wise and pure-hearted workingman, and help us to attain a firmer position, and a loftier attitude, in the conviction that, upon free and wisely directed labor, rests the greatness of personal, individual character, or reposes the power and the honor of the community, or the nation.

I will now speak of another disposition which you manifest here, namely, the disposition to appreciate, and to take a becoming pride in this region which you call your home.

I look upon this valley of the Kennebec as a beautiful domain. Go with me to the top of Irish Hill, or to some eminence overlooking the family of lakes, but a short distance to the west of us, or to the crown of one of those wooded heights, within our view, in Vassalborough; or, if you prefer, go with me to all of these points, and look with me from each, upon the territory outspread below. In some regions there are grander and bolder features in the landscape; in others, there are broader and more fertile plains; and lands in other zones, are not swept half the year by the cold winds of the north, or burried as long in the deep snows sent upon the gales and storms which blow from above the icebergs of the Gulf of Labrador and the Arctic Sea; yet, nowhere is there a better or a finer combination of topographical aspects; nowhere does the sun shine on a goodlier valley, or on lovelier prospects; nowhere are the advantages in resources, more numerous, open, or inviting, to the eye of enterprise, or the vision of industry. Why strain your sight in trying to see beyond your own horizon? Are you not pleased with the highlands and the lowlands, the hills, the fields, and the meadows, within this limit? Do you not see, here, the many shades of green upon the woods, in the summer, the golden and the scarlet hues of the elms, the birches, and the maples, interblended with the emerald of the firs and and the pines, in the autumn, and the brilliant display of frosty limbs and icy twigs, as far as the eye can reach, in the winter? And do you never gaze with animation and delight, or dwell with an open and charmed eye, upon the splendor of our lakes, the serpentine length of the Messalonskee, the forest-shadowed current of the Sebasticook, and the deeper, broader and stronger tide of the Kennebec? And have you never considered, that love of country, of one's native land, is a virtue, and that the pride, enterprise, industry, taste and perseverance, growing out of this virtue, oftener lead to thrift and success at home, than the most ambitious schemes and endeavors abroad? When General Scott was preparing for the Mexican war, he proposed how he should "conquer a peace" in Mexico. It should be the aim of those, who, in feelings and in speech, are at war with their homes in this fair region, and who think there is nothing here to live for, and, therefore, they must go to the broader and richer lands in the west, to call into action the lofty attributes of patriotism, to work with resolution and hope in the face of the sternest difficulties, and to "conquer a peace" in their own hearts. Their most formidable foes, are their own infidelity, faithlessness and discontent. Let these characteristics be subdued, and though this valley were a wilderness, they could, in conjunction with their neighbors and kindred, make it blossom like the rose. The Swiss need not leave his mountains for the more fertile domain of Italy; the Scot need not forsake his highlands for the vineyards of "sunny France;" the Briton need not bid farewell to his sterile moors, and noisome marshes, for the rich islands of the Gulf of Mexico. In this day, in either case, the exchange could not be made without an immense loss. The Yankee need not hate his native hills and valleys, and emigrate to the prairies of Wisconsin and Illinois. It is no doubt the will of Providence, that some of us should go to the unoccupied territories of the west, to establish and build up New England institutions, and to give direction to all great concerns. Let not the rest of us, however, remain here with heavy and desponding hearts. It is God's will that we take care of our own land as a grand nursery of new and similar commonwealths. By nature, England was a harder land than ours. Now that island is the garden of the world. What may not be done here, by a people claiming with the English the same origin, the same blood, the same genius, the same energy, and the same skill?

Emerson says, speaking of Englishmen and English Traits: "Their self-respect, their faith in causation, and their realistic logic or coupling of means to ends, have given them the leadership of the modern world." Montesquieu said, "no people have true common sense but those who are born in England." This common sense is a perception of all the conditions of our earthly existence, of laws that can be stated, and of laws that cannot be stated, or that are learned by practice, in which allowance for friction is made. They are impious in their skepticism of theory, and in high departments they are cramped and sterile. But the unconditional surrender to facts, and the choice of means to reach their ends, are as admirable as with ants and bees."

"The bias of the nation," he continues, "is a passion for utility. They love the lever, the screw, and pully, the Flanders draught horse, the waterfall, wind mills, tide mills; the sea and the wind to bear their freight ships. More than the diamond Koh-i-noor, which glitters among their crown jewels, they prize that dull pebble which is wiser than a man, whose poles turn themselves to the poles of the world, and whose axis is parallel to the axis of the world. Now, their toys are steam and galvanism. They are heavy at the fine arts, but adroit at the coarse; not good in jewelry or mosaics, but the best iron masters, colliers, wool-combers, and tanners, in Europe. They apply themselves to agriculture, to draining, to resisting encroachments of sea, wind, traveling sands, cold and wet subsoil; to fishery, to manufacture of indispensible staples,—salt, plumbago, leather, wool, glass, pottery, and brick,—to bees and silk worms,—and by their steady combinations they succeed. A manufacturer sits down to dinner in a suit of clothes which was wool on a sheep's back at sunrise. You dine with a gentleman on venison, pheasant, quail, pigeons, poultry, mushrooms, and pine apples, all the growth of his estate. They are neat husbands for ordering all their tools pertaining to the house and field. All are well kept. There is no want and no waste. They study use and fitness in their building, in the order of their dwellings, and in their dress. The Frenchman invented the ruffle, the Englishman added the shirt. The Englishman wears a sensible coat buttoned to the chin, of rough but solid and lasting texture. If he is a lord, he dresses a little worse than a commoner. They have diffused the taste for plain substantial hats, shoes, and coats through Europe. They think him the best dressed man, whose dress is so fit for his use that you cannot notice or remember to describe it."

All this is but a scrap of what is told of this wonderful people; but this will suffice to assure us that the true policy for us to pursue, is to set a proper value on our own means and resources, to stick to our old towns, and our old acres, with deep and fervid affection, and to persevere through all obstructions to the highest ends we see or desire.

I now come to consider your disposition to present, in your works, the useful and the beautiful in blended harmony.

This is one of the highest dispositions. In evincing it practically, you but follow the lesson of the Creator. In His handworks, in every object of His great Universe, utility and beauty are combined. The union of these characteristics is visible in the sun, moon and stars, in the form of the earth, in the mountains, the valleys, the forests, the rivers, the lakes, the seas; in every tree, every plant, every flower, every spire of grass; in every creature that walks, or flies, or swims. In the changes of the seasons, in all the displays of spring, summer, autumn and winter, the order and aspect are those of utility and beauty conjoined and blended. You cannot discover among the works of the Almighty, a general scene, or a single thing, which does not reveal the design to minister both to man's plainer wants, and to his loftier and finer needs.

I draw the conclusion from your presence and your doings here, that it is and will be one of your primal purposes, in your course of toil and improvement, to conform to this example of the great and benevolent Worker.

You will observe this lesson in your labors upon and about your buildings, your houses, your barns, your wood-sheds and your pig-styes. I do not suppose that many of you own, or will hereafter build, very costly houses, stables, &c. This is not the end to be attained. Every man should be limited to his means, and within this line, in style, convenience and adornment, he should plan and execute for comfort and taste. If a man is worth enough to buy a farm, and to put up buildings thereon, there is no reason why he should not put up good and handsome buildings, or why he should not lay out and adorn the grounds around them, in a style to meet the demands of convenience and refinement. I can only think when I see a farmer's buildings badly disposed, and showing the signs of neglect, or the tokens of an indolent or a slovenly care, that there is no excuse for the owner. Even poverty does not compel a man to present a show like this. The poorest farmer can keep the rules of order and neatness, can follow the leadings of a clear, true, and cunning eye, in transplanting his maples and elms, in training his grape vine, woodbine or honeysuckle, in planning and cultivating his garden, in pruning and trimming his orchard, and in preventing the accumulation of rubbish and waste about his buildings. You sometimes see the staging loosely hanging around the wealthy farmer's chimney, the brackets upon the roofs of his house and barn, his wood-pile and chips covering the ground before his door, his carriage, cart and hay-rack on the road-side, exposed to the sun, and to the rain, and disorder and waste all about his homestead. Such an exhibition, however, portends failure and ruin. No estate can hold up in value under such laxity and slovenliness. Nobody will be attracted to it. Nobody will wish to buy it. The lord of the manor may not know it, but it is true, nevertheless, that the men who go about with gold in their purses, hunting for country-seats, or rural homes, have an eye for beauty, for the union of order and comeliness, and pass by those places not agreeable to this vision.

The mansion, or the cottage, the occupant of which is not careful and neat, or whose pride, if we may call it so, leads him to violate all the laws of reason and taste, is an unattractive, and will soon become, a worthless affair. But the humblest, the most unpretending abode, the master of which is diligent and careful, observant of what is necessary and prompt to make improvements and repairs, is a goodly dwelling, with beautiful surroundings and fitting decorations, and any man of cultivated mind, would esteem himself honored to be invited into it, or to be made welcome at its frugal board. He would be charmed by the fitness of things, not by their pecuniary value. Every thing might be simple and cheap, yet every thing would be satisfactory—every room, every article of furniture, every piece of crockery,—every thing inside, every thing outside. The stately, majestic elm, with wide-spreading, pendulous branches, shades the grass and walks. That, cost no money,—only a little labor. God made it grow. And what if there is no ivy or honey suckle climbing the wall or the trellis? the bean-vine and the hop-vine, or the white and scarlet runners, do as well,—surprise the visiter or guest with their marvellous grace and beauty. Often, indeed, the simple architecture, the tasteful and appropriate disposition, and the skillfully or artistically arranged decorations of the man of limited means, are admirable; while the costly and ostentatious dwelling of the man of great wealth, pillared and porticoed and overwrought with carvings, and other ornamental work, and dazzling your eye with its blazing white walls, and its scarlet windows, is an offense, an abomination. The first mentioned home, is picturesque or beautiful. This one is the monument of bad taste and vanity.

You will copy the example of the Infinite Wisdom in nature, in producing the results of utility and beauty combined, upon your farms.

I don't suppose that I must labor here to convince any one that a farm should be substantially and handsomely fenced, or that it should be thoroughly and carefully cultivated, or that it should be divided into woodland, pasture, and field, with reference to soil, position, the sun and the winds, or that it should be bordered on the road-side with maples and elms, patched here and there, or in favorable localities, with orchards and nurseries, and dotted, at various points, in the irregular style of nature, with single towering elms, and graceful maples, and with clumps of hemlocks, firs and pines. All these things are dictated by economy, by providence, by worldly wisdom, by any attribute looking to profit, no less than by refined taste, or the love of the beautiful or the picturesque. If a handsome fence is as good as any other to protect your lands, it is better than one that is not handsome; it is the boundary of your domain, and a barrier against the incursions of wandering cattle, and other creatures roaming at large; and it is an ornament to your farm besides. The trees on the roadside cast a shade grateful to the traveler, wave their leavy arms, as if to welcome and honor him as he approaches or passes by on his journey. Some rigid utilitarian may say: why take so much pains with such trees? why not have all your trees fruit trees? Let the reply be—there is land enough for all purposes. Besides, no class of fruit trees, present the majesty of the elm, or the height and grace of the maple, or the cone-shape and the perpetual green of the fir, or the unfading beauty of the hemlock, cedar or pine. Also, if the Creator meant that trees should be only serviceable for wood and to bear fruit, for what did he intend the variety of the forest? I can see, and so can you, that it was the purpose of Infinite Wisdom, in calling forth the diversity of the woods, in size and height, in trunks, and limbs, and leaves, as well as in causing the numberless flowers, with their manifold shapes and hues, to please the love of beauty, "to minister delight to man," to touch and to charm him with grand and lovely shows. The orchard wears and unfolds a beauty of its own, but it cannot supply the place of the ornamental trees from our New England forests. I know a farmer who, till recently, would not consent to have even fruit trees growing upon his grounds. Two-thirds of his earthly life is past. A young orchard is now growing a little distance from his mansion, as an offering, reluctantly granted, to the continual importunity of his wife. It will not be likely to trouble him much with shade or fruit in his old age. I hope his wife, (who is younger,) and his children, will see the day when the round umbrageous tops of the trees shall touch each other, and hang to the ground with their green, and red, and russet globes. One day, seeing one of his neighbors transplanting trees around his house, he remarked, with evident pride in his own opinion: "If I wished to live in the woods, I would build my house in the woods." This man is opulent, and might, instead of living in the centre of a dominion of monotonous aspect, be encompassed with a thousand different objects, agreeable and entertaining to the eye. The difficulty with him is, he thinks there is nothing valuable but money, and his eye is as dim or blind to all the forms of beauty and grace growing from the earth, as that of a poor, uncultivated creature, who, coming out to a village one day from his little old log hut in the forest, and seeing a well-to-do acquaintance pruning and grafting his scores and scores of young apple trees, exclaimed with curious wonder: "I vow, Josiah, ef you don't look out, you'll hev to git to your house by spotted lines!"

Thorough cultivation implies a kind of work the effect of which is profit and beauty united. The best cultivated garden is the handsomest. Such a spot of ground is enriched to the degree of its capacity and its need, and it is worked over, dressed and kept with scrupulous fidelity and care. And the result appears in the form of profit and beauty. Now, if this is the end of well directed labor in the garden, what is the lesson to the farmer with respect to his work upon his plowed acres at large? That he should cultivate them as so many additions to his garden. Let every portion of his domain, under the toiler's hand, be fertilized and tilled to make it produce in crops and fruits to the utmost of its capability. As this lesson has been so often repeated, and is so generally accepted, I take it for granted that it is not necessary to prolong my remarks under this head. It seems to be only needful that I should remind you that a small division of land, thoroughly and carefully cultivated, yields its thirty, sixty, and a hundred fold, and presents its show of fresh and lively beauty; while, on the other hand, the broad fields of the negligent and unskillful farmer, bring forth the slim harvest, and look at you with the haggard and pallid features of poverty and barrenness.

The points of excellence you aim for in your buildings, and in your lands, you will strive to attain in your live stock, in your cattle and horses, in your sheep and swine, and in your fowls.

I could not be a partner in thought or feeling with the farmer who takes no interest as to the improvement of his flocks and herds, or to whom it would be all the same whether they were of one class or another. There is scarcely any object more interesting or noble, within the province of the husbandman, than that of improvement in live stock. How admirable is symmetry in the form of the ox or the horse, or strength in the one, or swiftness in the other. How much is added to the wealth and the attractiveness of the farm, when indifferent or inferior animals and birds, are superseded by better and handsomer ones. When you have considered the style and the order of the buildings, and the plan and the condition of the grounds, belonging to a diligent, progressive farmer, you examine the occupants of the stye, and the various sorts of fowls, to learn if the idea of utility and beauty extends to these possessions; and you go forth into the pastures, expecting to find the same idea revealed in the condition and the beauty of the creatures grazing within them. And you are not disappointed. Whoever becomes a connoisseur in a few things, becomes one in all within the limit of his employment. You are amply remunerated for a little effort, when you behold the noble oxen in repose, see the intelligence of their large eyes, and smell their healthy breath; or the dairy cows, fat, sleek and glossy, cropping busily the sweet grass; or the white flocks, feeding on the rocky hills and answering to your call; or the horses, grazing on the plains, and prancing and neighing with pride at your approach.

Is not Maine to be pre-eminent not only for her sea-board and commerce, but also for her agricultural interests,—her hay fields and grazing farms, and her cattle, sheep and horses? I learn from every intelligent farmer with whom I converse, that there is no reason why our people may not attain wealth rapidly, by raising live stock. Here are grass-bearing acres, without number; lakes, rivers, brooks and springs, at every point; a good market at every door, and easy access to the best markets abroad. Then let your flocks and herds multiply and increase, faster than Jacob's did in the land of Laban. Be not in haste to sell your cattle and horses. Wait till your hay and grass can be eaten, and your yearly supply for the market large. Your wool can go to the market, from the first. But be slow to part with your calves and colts, till you shall be able to send off, every fall, to Brighton, to Boston, and to New York, noble groups of oxen and horses, without impoverishing your estates. If you can do it then, it will be all the better if the roads and air be filled for miles with the dust of trampling hoofs, and the roar and clatter of uplifted, looing throats, and rattling horns, —all the better if your sturdy draught-horses, and your proud chargers, and your slim racers, go to the great cities in numbers sufficient to win for you a princely reward.

Some of you, perhaps, will say that I talk ambitiously. Say so, if it be your mood. I shall think it is better to talk in this strain, than to fold the hands, or to croak, and grumble, and whine. Little by little, Vermont has attained the results towards which I point; and in the same manner why may not Maine?

But the farmer's life should not be devoted wholly to the one aim of making money, of turning his produce and his stock into cash. Indeed, I know not in what sense he is an independent man, or different from a slave, if he cannot be proud and pleased with his possessions, if he cannot be content with them, while they are in his hands. I know not how he can dignify his occupation, unless he can, if his circumstances make it necessary, get along cheerfully with a little money, and be "passing rich" in heart and hope with his family and homestead, and the property in carts, wagons, tools and live stock, sufficient to enable him to keep within the line of competency and freedom.

The moral greatness of the farmer, who sees in his possessions what money cannot buy, is higher than wealth. It is shown in his wisdom, in his love for his family, in his honor, in his hospitality and urbanity, in his affection and care for every thing within his ownership and control. A man of this sort of greatness, walks in light, and he sees his acres glow and smile in the radiance of love. Not in vain to him do the shadows of the flying clouds sweep in silence over his fields; nor the brook glisten in the meadow; nor the woods or corn sway and rustle in the wind; nor the rain pour upon the thirsty earth. Not in vain to him do the seasons come and go with their various and glorious shows.

> "Not in vain to him are sent
> Seed time and harvest, or the vernal shower
> That darkens the brown tilth, or snow that beats
> On the white winter hills. Each brings in turn,
> Some truth; some lesson on the life of man,
> Or recognition of the Eternal Mind,
> Who veils his glory with the elements."

He observes, with more than ordinary interest, the condition, and supplies with tender concern, the wants, of his animals. The ox knoweth this master's crib, and never findeth it empty. This man calleth his sheep by name, and they know his voice, and follow him. He recognizes his horse as not merely a beast of burden, but as a companion and a friend; not as an unfeeling brute to be whipped and spurred to draw a load too great for his strength, or to perform a race too difficult for his power, but as a noble servant, willing to obey him to the extent of his ability; an intelligent, a sensitive creature, knowing the meaning of a kind word, or a gentle pat of the hand upon the neck, and on the alert to bear him over the course, with the swiftness of the wind.

I know not whom we should wish to be like, if not this man; whose condition to make our own, if not his. And this, I imagine, is what so many mean, who say: "The farmer's life is the noblest, the most independent, the happiest." They are not using the terms of flattery, nor do they mean the narrow, the unprofitable, the discontented, the miserable life, the farmer's life often is, but they mean the life it ought to be. Their desire, when they promise themselves a rural home in the future, is to attain the estate, which is so distinct and beautiful in the best idea of life on a farm. Their prayer is to attain and to enjoy a competency somewhere upon the warm and loving bosom of their mother earth—somewhere away from the strife and the turmoil of the crowded town—to leave, for such a spot, whereon to spend, in honest toil and cheerful peace, life's last days—

> "The vain low strife
> That makes men mad—the tug for wealth and power,
> The passions and the cares that wither life,
> And waste its little hour."

ANDROSCOGGIN CO. AG. SOCIETY.

The annual Cattle Show and Fair of this Society was held at the Society's ground in Lewiston, October 7th, 8th and 9th, 1856.

FROM REPORTS OF COMMITTEES.

Town Teams.

There were exhibited six ox teams, one from each of the towns of Lewiston, Auburn, Poland, Turner, Greene and Webster.

The team from Turner consisted of twenty-nine yokes of well matched, and to every appearance, well trained oxen. The average girth of ten yokes, was seven feet six inches. There were many four years old oxen that were of large size and beautiful proportions, evincing to your committee that the farmers of Turner are awake to their interest, and well up with the times in the way of rearing good stock.

The team from Poland consisted of twenty-six yokes of well matched oxen, nearly equal in proportions to those from Turner; average girth of ten yokes was seven feet five inches, and the committee feel assured that the farmers of Poland not only feel a deep interest in the rearing of good stock, but are merciful to the dumb beast.

The team from Auburn consisted of eleven yokes of oxen, well matched as to color and size, and made a noble appearance. Average girth seven feet four inches.

The team from Lewiston was large, and made a grand display upon the ground, numbering thirty-three yokes; average girth of ten yokes seven feet four inches, the same size as those from Auburn; but the committee thought them not quite so smooth and well matched.

The team from Greene consisted of twenty-six yokes of oxen, some very large and nice. We noticed a splendid yoke of oxen, five years old, belonging to Mr. Washburn of Greene; girth seven feet eight inches; likewise a very nice yoke belonging to Mr. William S. Parker. Average girth of ten yokes, seven feet one inch.

The team from Webster consisted of eleven yokes of oxen, very well matched, and some very good. Average girth six feet ten inches.

There were but two teams of three years old steers exhibited; one from the town of Greene and one from Webster.

The team from Webster consisted of nine yokes, well matched. Average girth six feet six inches.

The team from Greene consisted of eight yokes, well mated and good made steers; average girth six feet two inches.

There were three teams of two years old steers exhibited; one from Webster, one from Turner, and one from Lewiston.

The team from Turner consisted of nine yokes, well mated, and made a good appearance. Average girth five feet ten inches. We noticed one yoke of sparked steers, very nice indeed; girth six feet seven inches.

The team from Webster consisted of nine yokes, well mated, and nearly equal to those from Turner.

The team from Lewiston consisted of five yokes; they were well mated as to build and color, and bid fair to make something nice.

The committee found quite a number of teams upon the ground for their examination. Many more oxen and steers were presented, we think, than at any former exhibition. The cattle were in fine condition, and upon the whole made a good appearance, speaking much for their owners—showing that they were well cared for. But your committee regret that there was no more competition. They would have been glad to see a team from each town in the county, thus evincing their interest in the work; and we hope, that from what they have seen at this exhibition. that they will take courage; and though they have not the high hills and lofty ridges, nor yet the low, fertile, undulating valleys of their more favored sister towns, upon which cattle graze and become sleek and fat, yet by artificial means, by enterprize, industry, energy and perseverance, they may not only equal, but excel those that now bear away the prize.

John L. Davis, *Chairman.*

Working Oxen.

There were thirteen pairs of oxen entered for premium; all of them appeared to be well trained and were able to perform labor if required; their appearance, however, indicated that the owners had given heed to the declaration that the "merciful man is merciful to his beast," for all gave evidence of receiving careful and kind treatment; the committee regret that their opportunity for examination should be so limited, and would suggest whether those that succeed us in this duty should not have some other means of testing the work and discipline of oxen, besides seeing them move a few rods without any load being attached to them.

Timothy Bailey, *Chairman.*

Beef Oxen.

The committee on beef oxen have been together for examination, and we find on the secretary's book of entry, nine yokes of beef oxen; and in the performance of the duty assigned us, we found them to be a splendid lot—and also found them to exceed any lot of beef oxen ever presented to our view at any one time at our agricultural meeting—and we are highly gratified in anticipation of the future great improvement that is now advancing in neat stock, not only in this, our society, but also through the State of Maine.

Petfr Garcelon, *Chairman.*

STEERS.

There were thirty-five entries for premiums on steers, eleven of which were three years old, thirteen pairs of two years old, ten pairs of yearlings, and one pair of calves, the most of which gave us great reason to hope that Androscoggin would not be behind the older counties for years to come in that farmer's pride—the ox.

E. S. WHITMAN, *Chairman.*

SWINE.

At a court begun and holden at Lewiston, within and for the county of Androscoggin, on the 7th day of October, A. D. 1856, the following entries appeared on the docket:

No. 1. Improved Suffolk boar.
2. Lady Suffolk sow.
3. A youthful boar, five months old.
4. Sow and pigs.
5. Suffolk boar, one year old.
6. Suffolk sow.

Impressed with the responsibility of our position, the court entered upon the discharge of the solemn duty assigned us, determined to employ all constitutional means in meting out justice to the swinish multitude committed to our charge, and to avail ourselves of all the learning in our power on a subject so important to mankind.

We are unanimons in the opinion that by statute, jurisdiction attaches to this court in all cases of swine, whether biped or quadruped, coming under our observation, although by the "Rules and Orders" of this society, it seems to be limited to cases actually set down on the docket for trial. Desiring to maintain the integrity of this honorable society, and by no means transcend the already exalted jurisdiction of this honorable court, and preserve the constitution and the Union to the longest and lowest extremity, this court resolved to keep within the record of cases marked for trial, although bigger *bores* and greater *hogs* might be found outside. By the census of 1850, there were in this great Republic, thirty millions three hundred fifty-four thousand two hundred and thirteen quadrupedal swine—but whether learned or unlearned, male or female, black or white, bond or free, we are not told. It is sufficient for this court that we are the honored instruments of the dispensation of justice to a portion of more than thirty million subjects—each having a fair claim to consideration in relative merit, and each entitled to the fullest measure of justice at our hands. That the best judges of the character, condition and quality of animals, are those whose every-day business of life brings them most in contact with the character, condition and quality, either of the veritable, or those of like character, condition and quality, is ably attested in the judicious appointments of committees by the officers of this society. What more appropriate position than that of the honorable chairman and his associates of the committee on horses?—or of the honorable chairman and his fellows of the committee on bulls and bull calves? Who can cut and carve, dissect or stuff with a more skillful hand than your committee on fowls?—or who are better tasters than those who are constantly beckoning us to a land rich with "milk and honey." The honorable officers of this most honorable society well assigned the most honorable post—learning, legal, medical, theological, metaphysical, twistical, political, sparib-etical, ham-ological, sausag-etical, lard-ebotical, brussel-etical, nose-logical, and tail-egetical, with all its blushing honors combined in one magic wreath, tendered this honorable court by the Trustees of the Androscoggin Agricultural Society, while our modesty prompts us to reject them all as Cæsar twice refused the crown.

No. 1 on being called, was made to stand up and look the court in the face with some difficulty, while the merits of his case were considered. Mr. Calvin Mower appeared as his counsel, and recommended him as an improved Suffolk boar, sixteen months old, having been kept for sows the season past. Mr. Mower being an intelligent farmer, and able advocate, set forth the amiable qualities of his boar, (who is a fine, corpulent gentlemanly hog,) sustaining his argument by authorities which seemed unanswerable; but the court determined to see the latter end of his case, and ordered the boar aforesaid to face about, when behold, evidence unanswerable convinced us that he had lost his commission. Why he should have intruded himself into the presence of this court as a boar, can only be accounted for on the supposition that he thought lawyers a little *Greene.*

No. 2 was called, and came into court with great dignity, claiming to be the best breeding sow. Mr. Mower appeared in her behalf. Her counsel maintained by the book that she is of improved Suffolk breed, being a cross between the Suffolk and Chinese; showing a cut and description from "The Farm and the Fireside," which was either drawn for this identical sow, or she was grown for the cut. The evidence of her breeding qualities failed to come up to her prepossessing appearance, having in her only accouchment brought forth but eight pigs, and reared but two. But she is beautiful, and the court award her the first premium, recommending that she turn her attention more to the care of her family than the adorning of her person.

No. 3, a young boar, five months old, by Milton Carville, of Lewiston, in full commission, bowed in obedience to the call, and lay at full length in the box. In vain did the court order him to stand up, and when the sheriff with an ox-goad attempted to enforce the order, the resistance was almost equal to the dissolution of the Union. Nevertheless, he is a boar, and as such, entitled to consideration, although his nose is too long and picked; but as there is none to compete the second premium with him, and as the court understand the law, every pig that comes to the fair, is entitled to something at our hands, we say the society did promise, in manner and form as set forth in the specifications, and assess damages in the sum of one dollar and fifty cents.

No. 4, sow and pigs, half Suffolk and half Mackey. The case required a full draught from the Pierian spring. Sow and pigs half Suffolk and half Mackey! And the sow mother of the pigs! The court were equally divided on this question, and gave no opinion. A more important question arises in relation to the pigs, from the fact that the law requires "not less than six," and there were only three. Having granted the sow the second premium, and some of us believing that the conjunction "and" should not be construed to the injury of the pigs, and as the law should be liberally applied, we determined to relieve the pigs of a portion of the imputation attaching to the dam. But another serious question arose at this point. There were three pigs *non est inventus,* and although three times solemnly called to come into court, made default in appearance. But the strict letter of law must be regarded. The society promised for "best litter of pigs not less than six," and the evidence in this case was clear that the family consisted of seven. Now then, shall the three who did appear, suffer from the obstinacy of their brethren who would not? The three in *propria personæ* comprised the "best litter of pigs" on the ground, and with their associates, were "not less than six." If any member of the court does not concur in this reasoning, he will draw a dissenting opinion.

No. 5, Suffolk boar, one year old, entered by Melzar Gilbert, of Auburn, who informed us that he is of the full-blood Suffolk breed. The court unanimously pronounce him the best boar.

No. 6, Suffolk sow, by owner of No. 5. The evidence was clear that she was the mother of a numerous progeny, having given birth to two sets a year for the past three years, and by kind and generous nurture sustained them all.

Adjourned without day.

T. LUDDEN, *Chairman.*

The several committees on bulls and bull calves, matched oxen, cows and heifers, and horses, speak of the exhibition of animals as large, fine, and highly encouraging and satisfactory.

PLOWING MATCH.

The votaries of agricultural improvement have to do with superstition, as well as religious institutions. In confirmation of this declaration, allow me to give an illustration. I knew a man to object to the use of the horse cultivator, assigning as a reason that the Good Book says that we must eat our bread by the sweat of our face; and he seemed inclined to task his physical powers to any extent, rather than violate the scripture; so that self-examination, whether we are in the true faith in agricultural matters, becomes necessary. It is very gratifying to the lovers of improvement that the inventive genius of man has not yet attained to a limit, and in our mode of culture no implement is so important as the plow, inasmuch as no after culture can atone for bad plowing; and all judicous farmers will agree that that plowing is best which most complctly buries all vegetable matter, and leaves the ground in the lightest and most mellow condition. The sod and subsoil plow, which was the kind used by Lewis Gilbert, of Greene, and which he says is the Michigan Double Plow improved, effected this object in a degree very highly satisfactory to the committee, and all other beholders; caution would be necessary in regard to adopting it on strong land; but the committee could see no reason why its general introduction, where the soil is tolerably free from obstructions, would not be a decided improvement.

On rough, stony ground, the large wood plow used by Mr. Isaac G. Field would be best, but on the ground where the experiment was tried, taking into account the ease of draft, the committee were of opinion that the iron plow used by Mr. Bradford was most economical.

Oliver Mower, *Chairman.*

Agricultural Tools.

We wish to say a few words in relation to the prevailing sentiment, that farmers can do without, or at least, get along with, but few, and those of the most ordinary and cheap kind of tools. This is not fiction or fancy of the brain, but fact that stands out in bold relief. Let any one that will take pains to inform himself, ask the manufacturer and wholesale merchant; let him travel over this fine county, and he will find almost everything in the shape of tools but the right kind; yes, and men abundantly able, using these miserable things year after year, because they make or buy them very cheap. This is a great error, and ought to be corrected. To think that so vast an amount of capital should be managed in this way is lamentable. Why, sir, its comparative amount would swallow up all other industrial pursuits; and dependent on the successful management of this great interest is not only the comfort of man and all domestic animals, but their very existence. This idea that we have got along well enough with the tools our fathers used, is a wrong idea; it is not based on correct principles. Our soil is not what it was when covered with the rich vegetable mould formed by the forest. It mattered but little, as long as that lasted, how it was managed. But now that is gone, we must seek and bring up those mineral substances that are deposited lower down in the earth, that they may unite with the gases of the air, and form food for plants. We want tools that will accomplish this end in the best possible manner. Stir deep—bring up and mix with the top soil a portion of the virgin soil; make it fine as deep as you go; apply some well prepared manure to catch the impurities of the air as they come floating along, and my word for it, you need not go west to raise your own bread.

We much regret the meagre show of Agricultural tools at this, our fifth show, and can account for it only in this way: first, that there have been many agricultural tools entered for premiums, for two years in succession, that were never examined or reported upon by any committee appointed by this society; and secondly, the little interest felt by the community about their tools to till the earth. We hope there may be an awakening on the subject.

LEWIS GILBERT, *Chairman.*

BREAD.

Perhaps the making of bread is as important as any object, towards which the attention of this society is directed. Health and comfort depends much on the quality of the bread one eats. Some one says that "love cannot live very long on bad bread." If so, it behooves all wives, and all who may desire or consent to become wives, to make good bread. The propriety of offering larger, aud more numerous premiums for rye and Indian bread, is respectfully submitted. Good flour bread and nice cake are not uncommon, but the best quality of brown bread is very rare; while the latter is much more conducive to health.

L. S. TRIPP, *Chairman.*

BUTTER AND CHEESE.

We found upon the table, for examination, twenty lots of butter and eleven cheeses.

Butter. One lot might have been nice and good, but was injured by too much sugar. Perhaps a little loaf sugar, finely pulverized, might be used to advantage, but in no great quantities would we recommend it. Better with none than much. The other nineteen lots were nice and good, and do honor, not only to the makers, but to Androscoggin county.

Cheese. They were all good and would rank A No 1 in any market. And we would especially recommend some of the Boston hotel keepers to call upon our butter and cheese makers and contract for a supply without regard to prices, for we believe it will not only pay, but be very acceptable to the palates of at least some of their occasional guests.

JOHN M. FRYE.

IRON MANUFACTURES.

We found entered for examination, two Portable Bakers, made of galvanized iron; cost from $12 to $25, according to size. We are informed that they will bake an ovenful of pies, say from twelve to twenty, in a few minutes, with only four or five pounds of hard wood; thus making a great saving of wood, which in our Pine Tree State even, is getting to be a cash article. They are so constructed as to retain all the heat and send none into the room.

COMPOST MANURE.

In considering the subject of manure, we hardly know where to begin or end. Manure is the Alpha and Omega of all successful farming. But first, its definition. The word manure is a general name given to any matter that fertilizes the land, or furnishes nutriment to plants. It also denotes action, which is also a very important thing in farming.

Manures are of two kinds, the fossil or mineral, and putrescent. They have three forms, the solid, liquid and gaseous.

As all the vegetable kingdom takes its food by absorption through the nutritive organs of their leaves and roots, it must all be reduced to the two last forms. The food of plants is, prepared for their reception by the action of the acids and alkalies on solids. They produce on animal and vegetable matter fermentation and putrifaction, the product of which is *geine* or *humus*.

The principal food of plants in its prepared state, is hydrogen, oxygen, carbon and nitrogen, with their different combinations, these being differently combined, form a vast number of compounds.

The union of oxygen and hydrogen form water; nitrogen and oxygen, air; hydrogen and nitrogen, ammonia; carbon and oxygen form carbonic acid. These are four important articles for the food of plants. There are several others, but I have not space to name them.

Now the business of the farmer, so far as his agency goes, is to prepare this food and set it before this family of vegetables, and place it within their reach, so they can help themselves. But the farmer says, this is a hungry family; I have not enough for them to eat. Now I would inquire the reason. Is it not because you have allowed their food to go to waste? Your farms produced abundantly when first cleared, and there has not been one particle of fertilizing matter annihilated. The question then is, what has become of it?

I have not space to answer this question now but may at some future time.

CALVIN MOWER, *Chairman.*

John Stevens' Statement. Heap composed of green brakes, old potato tops, muck and leaves from swamp, sods from broken up pasture ground, such as will not rot but leave the field in bad shape unless taken off. I prepare a grate on which I make my heap; near this I dig a vat four feet deep and ten feet square, in which I prepare my lye, composed of saturated water—quicklime, about two bushels; ashes, four bushels; soot, one bushel; salt, four bushels; plaster, four bushels. In making the lye, the lime is slacked, and put in after the other materials are added. The grate is built eight inches from the ground to let the air under. The heap is commenced with green vegetables, about eight inches deep. Then put on as much muck, and mix slightly; wet with lye thoroughly; lay on again as before, and wet with lye until the heap is built, containing about six cords. After the heap is completed, cover it over with brakes or straw so that the sun and wet will not injure it. In four or six days after the heap becomes heated, take off the covering, and wet again thoroughly, punching holes with a bar. Repeat four times, when the desired effect will have been produced. I also have a ditch running to the vat, which takes all rinsings from the barn-yard to the vat."

Stephen H. Read's Statement. "I enter for premium a quantity of compost, estimated to be not less than six cords, having been prepared since the middle of June last, as follows: About one-half was prepared in my hog yard, twelve by eighteen feet, with a plank floor and roof. The manure and bedding from the horse stable is thrown into the yard daily, adding swamp muck, loam, weeds from the garden, unleached ashes, swamp grass, &c. The drain that conveys all the slops from the house empties into this yard; by this it is kept sufficiently moist to keep up a proper fermentation; occasionally pitching it over—throwing over the contents of the privy vault. The remainder was prepared under my ox and cow linter, by adding almost daily something such as muck, loam, straw, &c., to keep the strength from escaping, and to take up the urine; and with such compost prepared in that way, I can add one-half or more to my manure yearly, and I think I can safely say from actual experience, that it is worth as much per cord as the clear manure usually managed by farmers."

Gathered from Statements.

LIVE STOCK.

Stephen Bray showed a three years old stud colt, weighing nine hundred and fifty pounds. He was sired by Whalebone

Morgan, formerly owned by Philo Clark of Turner, descended from the "Sherman Morgan." His dam was half Morgan and Messenger. Says: "I prefer this breed to all others that have come under my observation, for closeness of build, beauty and symmetry of muscles and limbs, and finally for endurance, strength, speed, ease and gentleness of motion. I have fed him through the winter with four quarts per day of cut carrots, with clover hay."

William M. Longley exhibited a cow, calf, and yearling heifer. The two first full blood Durham, and the last fifteen-sixteenths Durham, and one-sixteenth Hereford. The cow was bred by Mr. Haines of Hallowell, and sired by bull imported by him, and out of a cow owned by Mr. Greene of Winslow. She is six years old, and is a superior cow for milk; was milked till the middle of May, and dropped the calf presented with her July 22d. "She gives more milk in a season than any cow I ever owned."

Jacob Elder has a cow, bought from a drove when one year old. She is now six years old, and supposed to be part Durham. She had a calf when two years old, and has never been dry. In June, he made from her milk, in fourteen days, thirty-three pounds of butter. From the 24th of May to the 24th of September, he made two hundred pounds of butter, besides the milk and cream used in the family; gives about an average of eight quarts of milk per day, the year round. In June gives about twenty quarts, and in July from fifteen to sixteen quarts. "I sold one of her heifers, two years old, for beef, for fifty dollars."

Jonathan Mower bred and raised a yoke of steers, which he exhibited for premium, two years old, grade Durhams. They had half the milk of the cow for three months, and through the winter good hay and roots. They girt six feet and seven inches.

Crops.

Philo Clark sowed one acre of Oregon wheat. The soil a sandy loam, fine and friable, of a yellow color, free from stone, and underlaid by an open subsoil. The year previous, corn was grown on the same ground. Plowed ten inches deep, and manured with two hundred pounds of Peruvian Guano. The seed was washed and then rolled in dry slacked lime, and sowed broadcast, two bushels to the acre, April 29th, and harvested in August, when it was somewhat hardened. Produce, nineteen and five-eighths bushels.

Value of crop,	$45 00
Expense of cultivation and harvesting,	$10 00
Net profit,	$35 00

Samuel Chadbourn produced a crop of "black" oats, which were grown on a loam, light and friable, about two feet deep, of a dark color, containing stones of granite, large and small, and underlaid by a hard and gravelly subsoil. It was plowed nine inches deep; sowed May 8th, broadcast. The piece contained two acres and forty-eight rods. Sowed two bushels and six quarts of seed to the acre, and produced forty-one bushels to the acre. They were harvested August 27th. On the whole piece the produce was ninety-four bushels of oats, and four tons of straw.

Value of crop,	$37 60
Cost of crop,	$20 00
Profit,	$17 00

Peter Garcelon sowed one acre of wheat, on a soil about a foot deep, of a light color, free from stone, granite formation underlaid with a clay subsoil. It had been planted to potatoes, and to corn the year before; was plowed twice in the spring, about a foot deep the first time, and about six inches the last; manured with ten bushels of plaster, lime and ashes, mixed together. The seed was washed in "salt pickle" one night, and then rolled in the mixture of lime, plaster and ashes; was sowed broadcast, five pecks to the acre. Harvested in August, in rather a green state. Produce, sixteen bushels to the acre.

Value of crop,	$36 00
Cost of producing crop, as stated,	$6 00
Profit,	$30 00

Samuel Chadbourn sowed one acre of Scotch Fyfe wheat, on a loam, ash colored, light and friable, two feet deep, stony, and underlaid by a hard gravelly subsoil. Corn was grown on the land the year previous. It was plowed eight inches deep; was sowed May 10th, broadcast, two bushels of seed per acre, and harvested August 23d; the produce sixteen and a half bushels, weighing nine hundred and fifty-seven pounds, and the straw one and one-fourth tons.

Value of crop, ...	$33 00
Expense, as stated, ...	$8 00
Profit, ...	$25 00

F. S. Mitchell planted one acre of potatoes, on a loam that is light and friable, of dark color, and underlaid by a hard and gravelly subsoil. The year before, it was sown to oats on a sod. The variety, "Long Reds." Planted 10th of June, in hills three feet each way; ten bushels of seed to the acre; hoed once, and applied no manure. They were harvested in October, and produced one hundred and twenty-five bushels per acre. No statement of cost or value of crop.

Tristram Hill grew a crop of "Long Red" potatoes, on a loam, light and friable, dark color and stony, on a hard subsoil. It was in grass the previous year. He manured with ten loads of green manure, and planted May 15th, three feet between the rows, and two feet between the hills, with twelve bushels of seed to the acre. Hoed once, and harvested November 1st. Produce, one hundred and ninety-one bushels, weighing eleven thousand four hundred and sixty pounds.

Plowing, ...		$5 00
Planting, ...		3 00
Hoeing, ...		3 00
Harvesting, ...		4 00
		$15 00
191 bushels, 16⅔ cts., . . .	$31 83	
Profit, ...		$16 83

Peter Garcelon asked a premium on a crop of corn grown on a piece of land planted to potatoes the previous year. Plowed twice, one foot deep the first time, and six inches the next;

harrowed it some five or six times before planting. Spread on thirty-two loads of barn yard manure before second plowing. Put in the hill fourteen loads of hog and slaughter house manure and dropped on this six bushels of a mixture composed of plaster, lime and ashes; planted in hills four feet apart each way, and hoed twice; put of the before named mixture, eight bushels on the hills before hoeing the second time. Cut it up by the roots between the 25th and 30th of September. Produce of one acre, seventy-seven and a half bushels of corn. No statement of cost of production or value of crop.

David S. Stevens cultivated one-fourth of an acre of carrots on a sandy soil. This was the third crop from the same piece. It was manured with seven loads of compost and fifty bushels of leached ashes. The soil was worked to the depth of ten inches. The variety was the common orange carrot. The manure was plowed in, seed sown with machine, in drills about fifteen inches apart, and weeded with hoe and hands. Produce, four thousand nine hundred and seventy pounds on one fourth of an acre. Crop damaged by rust.

C. H. Webster grew three hundred and fifty-eight pounds of Marrow squashes from one hill. Soil clayey, worked two feet deep, and three barrows of compost added. Selected the three best vines to remain.

Samuel Chadbourne claimed a premium on ruta bagas cultivated on a piece of land where the same crop was grown the year before. He applied two cords of green manure to the land, which manured eighty-eight rods. Produce, sixteen thousand and twenty pounds, or two hundred and sixty-seven bushels.

Expense; plowing, myself, oxen and plow, one-half day,		$1 25
Harrowing,		50
Manuring, two hands and oxen, one-half day,		1 50
Planting, two days' work,		2 00
Hoeing, five days' work,		5 00
Harvesting, four days work,		4 00
		$14 25
267 bushels of turnips at 20 cents,	$53 40	
Profit,		$39 15

Dairy.

Statement on Cheese. I strain the milk at night in pans, in the morning skim off what cream rises during the night, put the milk into my tub, strain the morning's milk in with it, and add hot water enough to make it about the same degree of heat that milk is when it comes from the cow; then add what rennet I think sufficient to bring it to a curd; let it stand from two to three hours and sometimes longer, (the time depending upon the strength of the rennet;) then with a pudding stick I stir it up and let it stand until the curd settles; then dip off what whey I can conveniently, and put the curd into a cloth to drain. In preparing it for the press, I cut it in squares about half an inch thick, and to a peck of cheese add a cup of salt; put it in press, let it stand about four hours, then turn it, let it stand about twenty-four hours, and when in the screen turn and grease them every day.

Nancy B. Chadbourn.

SAGADAHOC CO. AG. SOCIETY.

AMOUNT OF PREMIUMS AWARDED.

Fruits and flowers,	$21 00
Garden vegetables,	24 25
Town teams,	20 00
Bulls,	23 00
Honey, preserves, &c.,	17 75
Fowls,	9 00
Town teams of steers,	7 00
Fine arts,	8 00
Equestrian exercises,	39 50
Steers, calves, &c.,	25 00
Yearling calves,	7 75
Domestic manufactures,	37 50
Bread,	6 50
Horses,	58 50
Plowing,	12 00
Fat cattle,	16 00
Cows and heifers,	67 00
Working oxen,	14 00
Sheep,	9 00
Wool,	50
Swine,	16 00
Agricultural implements,	4 00
Hard ware and furniture,	5 50
Carriages,	12 00
Leather, harnesses, &c.,	8 00
Naval architecture,	10 00
Dairy products,	29 50
Cheese,	5 00
Field crops,	19 00
	$532 25

Report on Agricultural Implements.

In presenting their report, the committee on Agricultural Implements have to express their regret, that a greater number and variety of articles have not been presented for examination. They report:

The Eagle plow, entered by Mr. J. P. Tibbets of Topsham, appears from its general good properties, and the perfection and beauty of its finish, deserving of high commendation.

The Goddard plow, manufactured at Brunswick, appears to be a very superior instrument, uniting in a high degree the essential properties of holding easy, turning well, and with great ease, or at the least waste of power in working.

The committee were much pleased with a hay cutter, entered by Mr. L. G. Russell. This machine is easily worked by one person. The arrangement of its knives is such, as to obviate almost entirely the usual danger to the hands of the operator. The machine will probably answer well for cutting vegetables, though not so well for this purpose as for the cutting of fodder, to which it appears to be specially and admirably adapted.

A corn-planter, entered by the same person, and manufactured in Topsham, is a very ingenious machine, well adapted to its object, and deserving the special attention of cultivators.

A horse collar, also entered by Mr. Russell, is evidently constructed on right principles. The lower part is firm and carefully adapted to the position of most advantageous pressure, while the upper part is flexible, allowing a free motion to the shoulders of the horse.

Two hay cutters, entered by Mr. J. G. Locke of Auburn, are superior instruments of the kind.

The articles presented, not falling within the regulations of the society, the committee have awarded no premiums. They recommend, however, a gratuity for the Goddard plow, and one also for the collection of articles entered by Mr. Russell.

Wm. Smyth, *Chairman.*

From the Report on Dairy Products.

There were presented to the committee twenty-three lots of butter, the larger part of which was of excellent quality, and is highly commended. A few lots, however, could only be called fair, owing in part to the manufacturers using salt altogether too freely. This defect is noticed by the committee for the benefit of the manufacturers, improvements in this particular being necessary, to afford a fair chance of success, in competing for future prizes of the Society. Sixteen lots of butter were really good, some of them deserving much praise. It was by no means an easy task for the committee to make a selection. No premium, under the first class could be awarded, the conditions presented by the Society as to furnishing information respecting management of the dairy, not having been fully complied with.

Scraps gathered from Statements.

Harriet E. Nickerson presented butter, which was made from a dairy of three cows, kept in winter on meadow hay, and in summer on common highland pasture. The milk was set in a milk cellar until sour. The cream taken off, and when churned, the butter is thoroughly washed in cold water; then salted and put in the cellar to stand from twelve to twenty-four hours; then it is worked over, packed down in layers, with fine salt, loaf sugar, and saltpetre; this mixture is well pulverized, and consists of one table-spoonful of sugar to half a cupful of salt, and one tea-spoonful of saltpetre.

Isaac P. Tibbetts states that he has a dairy of three cows, two grade Durham, and one Native. In winter usually feeds on hay and water alone, except once a week gives some potatoes; but when short of good hay, he cuts it and mixes with meal or shorts, and feeds it wet. Sets the milk twenty-four hours for cream. Washes the butter in cold water as it comes from the churn, till free from buttermilk, and seasons with salt, sugar and saltpetre, in the proportion of one ounce of sugar and one ounce of saltpetre to two quarts of salt, and of this mixture, thoroughly worked together, an ounce is added to each pound of butter. He makes one pound of butter per day to each cow, from June to October. Received the first premium.

William White obtained the third premium on butter and cheese. He has a dairy of six cows, which are a cross of the Durhams and Devons; feeds with hay, corn-fodder, and occasionally with roots, in winter, and on grass alone in summer. High land pasture he considers best, and clover the best kind of grass. He churns the strippings with the cream, and at a temperature as near that of milk when drawn from the cow as may be; lays down his butter in pickle, and makes one hundred pounds per cow during the season.

In making cheese, he strains the milk into the tub, adds the rennet, and in two hours puts the curd to draining, and then puts it to press immediately, after cutting fine and seasoning it with salt. After being taken from the press, turned and dressed daily till it is thoroughly seasoned. His daughter, sixteen years old, obtained a first premium on butter.

Live Stock.

Waterman Tibbets obtained first premium on a cow which averages twenty quarts per day during June and July; commends her both as a stock and dairy animal.

Isaac P. Tibbets obtained premium on a horse, a bull, three cows, and a yearling heifer. The horse, a Messenger; the bull, a native; the cows, one native, and two grade Durhams; and the heifer a grade Durham. He raised the heifer himself. She was taken from the cow when two weeks old and taught to drink. The cows unite the qualities of breeders and milkers; yield thirteen quarts of milk each per day during the months of June and July; feeds on rough fodder in early winter, but after the first of January, on good English hay, and waters them in the yard twice a day. To this is added one quart of meal per day, and potatoes once a week.

D. Fulton presented a yoke of steers on which he obtained the second premium; a three years old colt, first premium; fifteen cows, first premium; one sow, second premium; six half Suffolk pigs, first premium. Steers were grade Durham, colt a mixture of Messenger, Morgan and French Canadian; cows, Natives; sow, White Chester and Mackey; and the pigs half Suffolk. All bred by himself. The colt, a fast walker. The cows, better for milk than for stock. In June and July, average fourteen quarts per day, each; through the milk season, twelve quarts.

John E. Dow had on exhibition a Suffolk boar, for which he received the first premium; a sow, Newbury White, first premium; and a litter of half Suffolk pigs, second premium. All raised by himself. He feeds twice a day with warm feed, and keeps them in a dry and warm place.

Crops.

D. Fulton obtained first premium on corn grown on a coarse, sandy soil; was in pasture the year previous; plowed ten inches, and applied to one and three-eighths acres fifty loads of manure; planted May 26th with "King Philip" seed in drills four feet apart; plants one foot apart; stalks were cut after the corn turned, and it was harvested 20th September. Produce, ninety and three-fourths bushels of sixty pounds each.

Expense; plowing,	$6 00	Return; 90¾ bushels,	$90 75
Harrowing,	3 00	Deduct,	77 00
Manure,	50 00		
Planting,	4 00	Leaves present profit of	$13 75
Hoeing,	14 00	To which add value of manure left in soil?	
	$77 00		

Joseph Coombs received second premium on corn grown on a sandy loam, of a dark color, underlaid by clay, and free from stones; was in grass the year previous, and plowed about eight inches deep. The seed was an eight rowed variety, planted in hills about three and a half feet apart each way, 10th to 15th of May. Hoed twice, cut the stalks, and harvested the last of September. Produce, one hundred and ten bushels of ears.

Fifty-five bushels of corn at 90 cents, . .	$49 50
Cost of growing it, ...	23 00
Net profit, ...	$26 50

Benjamin Richardson grew a crop of beans, on a heavy loam, underlaid by clay subsoil. Plowed eight inches. A crop of beans was taken from it the year before; was manured with one and a half cords of barn-yard manure. The seed (Marrowfats) was planted in drills about two feet apart, June 5th, and harvested October 1st. Quantity of land, one-fourth of an acre. Produce, fourteen bushels.

14 bushels, $1.90,	$26 60
Cost of growing, as stated,	13 88
Profit,	$12 72

Nathaniel Wood raised a crop of Indian wheat, on a sandy loam, rather coarse, and underlaid by an open subsoil, free from stone; taken up from pasture, and was sown about the 20th of June, broadcast, and harvested September 20th. Produce, twenty-five bushels per acre, and one and one-half tons of straw. Had four acres, which cost about thirty-two dollars to grow and fit for market.

100 bushels Indian wheat, 80 cts.,	$80 00
Cost of production,	32 00
Profit,	$48 00

Benjamin M. Brown obtained the first premium on potatoes. They were grown on a clay loam. The potatoes were preceded by a turnip crop. Manured with rock weed, at the rate of thirty-two tons to the acre, and plowed eleven inches deep. The variety grown was the Bearce. He also raised a crop of turnips on the same kind of soil and like treatment, of the Green Globe variety. They were weeded but once. No statement regarding the amount of produce, quantity of land, or the cost of cultivation.

BREAD.

Mrs. Susan P. Cary received the first premium on brown bread, made of one quart rye meal and one quart of Indian meal, two quarts milk and a half a cup of molasses, one tea-spoonful of salt, and one tea-spoonful of soda.

HONEY.

S. S. Cary keeps bees, and presented a specimen of honey; he obtained the first premium for the greatest amount—uses the common old style of hive, with small boxes in the upper part, and obtains the honey by removing the boxes; when necessary feeds the bees in the lower part of the hive.

MANUFACTURES, MACHINERY, ETC.

Elmes & Tibbetts had on exhibition a ship's steering wheel and fixtures, iron fence of different patterns, specimens of forging, staples and plank screws, all of which were made by them in Bath. They claim to have made improvements in all the articles, rendering them more simple and durable.

Several models of different kinds of sailing craft, and matters belonging thereto, were presented, including among other things, Emerson's Patent Windlass, which is highly commended, and the committee close their report as follows:

"As Maine abounds in ships and models, it is to be regretted that so few specimens should have been exhibited. The committee hope more interest may be manifested another year, and that the ship-builders and the merchants will be represented in a manner worthy of Maine, and of themselves."

FRANKLIN CO. AGRICULTURAL SOCIETY.

AMOUNT PAID OUT FOR PREMIUMS FOR 1856.

Ladies' manufactures,	$22 80
Butter, cheese and bread,	12 00
Cabinet and smith work,	5 00
Cows and bulls,	17 50
Beef oxen,	9 00
Draft oxen,	7 50
Working oxen,	12 00
Town ox teams,	35 00
Town steer teams three years old,	18 00
Town steer teams two years old,	9 00
Town steer teams one year old,	2 50
Steers three years old,	8 00
Steers two years old,	4 50
Steer teams one year old,	4 00
Heifers and calves,	12 75
Sheep and swine,	9 75
Crops,	5 00
	$194 30

The returns from this Society, so far as regards the awards of premiums and all their financial affairs, are more full and business like than any other, and the reports show plainly that there was a large show of fine cattle, including six town teams of ten yokes each, averaging throughout upwards of seven feet in girth; also several town teams of steers from Farmington, Industry, Jay, Wilton, New Sharon, &c., together with many animals of great excellence; but the papers furnish no information of general interest beyond this fact.

The following statement of a crop is found:

H. B. Prescott grew an acre of corn on a light and friable sandy loam, of dark color, free from stone, on which he grew corn and potatoes the year before. Plowed about ten inches deep, spread on and plowed in ten cart loads of green manure, and put twelve loads in the hill. Planted May 15; hoed twice; harvested September 15; was planted in rows four feet apart, and two feet between the rows, and cut up by the roots when quite hard. Produce sixty-nine bushels and eighteen quarts, worth ninety-five cents per bushel. Cost of growing not given.

In the report of the incidental committee is found the following, and if it should prove that "leached ashes and coal dust" applied to clayey loam will produce such onions, in other instances as well, the cultivation of this crop may be resumed with a confidence which has not been felt since the maggots have evinced such a disinclination to accept the "leave to withdraw" constantly tendered to them for some years past.

"Major Loring Adams of Wilton, presented for examination, one-half bushel of onions, as a fair specimen of eight bushels raised on a bed fifteen by eighteen feet; soil, a clayey loam, dressed with leached ashes and coal dust. The onions were of very superior quality, fully equal to the best "Danvers" and eminently demonstrate the practicability of their cultivation in Franklin county."

PISCATAQUIS COUNTY AG. SOCIETY.

LIVE STOCK.

W. W. Harris received the first premium for the best "business horse." He was raised in Vermont, is of the Messenger blood, a very fast walker, and six years old.

Ellis Robinson took the first premiums on the following stock, all of which he raised himself: A stock cow, seven years old; a milch cow, seven years old, and a three year old heifer. The cows are half Durham, and the heifer three-fourths Durham. He "keeps them on straw with two quarts of meal during the last month before calving, and in a dry and warm stable."

DAIRY PRODUCE.

W. G. Jewett has a dairy of four cows from which he makes one hundred and fifty pounds of butter each in a season. Keeps them on straw and coarse fodder during the first half of the winter, and on hay alone during the remainder of the winter. Prefers highland pasture for milch cows. Churns the cream at the temperature of the dairy. Received the second premium on September butter.

B. F. Robinson received the second premium on June butter. He has a dairy of six cows, and they average one pound of butter per day each. Churns the cream alone, packs and covers it with salt.

Ellis Robinson's dairy consists of five cows, from which he averages two and one-half pounds of cheese per cow per day. In the winter he feeds them on straw. (Does he give them no hay or provender?) He considers the white clover or honeysuckle the best grass for cows in milk. The milk is made into curd as soon as possible after it is milked. He "allows one tea-cupful of salt to twenty-five pounds of curd."

FRUITS.

J. Leeman presented six specimens of apples, viz.: Somerset, Porter, William's Favorite, Hightop Sweeting, Orange Sweeting, and Low Elder. His land is a sandy loam and a deep soil, and has received no cultivation for several years past. He received the first premium on summer apples, and the second premium on winter apples. All the trees are grafts but one. (Which is that?)

Phineas M. Jefferds obtained the first premium on winter apples. He presented specimens of six varieties of apples—Hubbardston Nonsuch, Ribston Pippin, Roxbury Russet, Baldwin, Nodhead, and Ladies Sweet. The trees are between thirty and forty years old, grafted in the top. The soil is deep and rocky. All the cultivation it has had is to be pastured by the hogs.

S. J. Greely presented a loaf of brown bread, and received the first premium. "Scald the Indian meal in the same quantity of stewed pumpkin. When cool add two cups of buttermilk to a tea-spoonful of salæratus, one cup of molasses and a little salt. Mix in two parts rye or barley meal, flour or coarse ground wheat. Bake in a hot oven, six hours.

MACHINERY AND IMPLEMENTS.

Chandler, Brown & Co. of Foxcroft, presented a specimen of plows, cultivators and farmer's boiler, manufactured by themselves, made from iron from the Katahdin iron works. The boiler has been in use only one year, but the other implements have been fully tested and their value demonstrated. They received all the society's premiums on plows and cultivators, and a gratuity on the boiler. [What is there peculiar about this boiler?]

WEST PENOBSCOT AG. SOCIETY.

THIS SOCIETY PAID OUT IN PREMIUMS IN 1856:

On live stock,	$120 50
Fruit,	16 40
Crops,	40 20
Manufactures,	32 10
	$209 20

CROPS.

There was a very commendable competition among the farmers of this society, for the premiums under this division, and some very fair crops, particularly of corn. There were no less than *twenty-two* entries in this division. This shows a zeal worthy of all praise, and contrasts strongly with some other societies, where there were but two or three entries. It is to be regretted that there are not more statements of interesting details to present here.

Sylvester Eddy applied for a premium on a half acre of Indian corn. It was planted on a gravelly and slaty loam, light and friable. The soil is about eighteen inches deep, of a light color, and underlaid with a hard, gravelly subsoil. It was broken up the June before the planting and sowed to oats without manure. The May following the oat stubble was plowed in from eight inches to a foot deep, after spreading on four cords of green manure. It was planted in rows three and one-half feet apart, and in hills two and one-half feet apart, and applied in the hill two cords of well rotted compost made of hog manure and swamp muck. It was planted the 20th day of May, and cultivated and hoed twice during the season, and harvested the second day of October. It was cut up at the roots while the stalks were quite green. I prefer this method, as the fodder is worth much more than when left to dry standing. Produce, seventy bushels of ears, weighing forty pounds to the bushel.

Plowing, harrowing, furrowing, and hauling manure,		$8 00
Manure,		12 00
Hoeing and planting,		6 00
Harvesting,		4 00
		$30 00
70 bushels ears of corn at 50 cents,	$35 00	
1200 pounds corn fodder,	4 50	
3 bushels beans at $1.75,	5 25	
1 load of pumpkins,	1 00	
	$45 75	
Profit,		15 75
		$45 75

Jacob W. Haskell sowed one acre of wheat on which he asked a premium, and also an acre of barley. The soil is stiff and hard before it is plowed, inclined to clay; but when stirred dry, it becomes light and fine. Is of a dark color, and has almost all kinds of rocks mixed with it, some of them quite large. The subsoil free from stone. The ground on which the barley was grown, was planted to corn in 1854. Six cords of manure spread and plowed in from eight to ten inches deep, and three cords more used in the hill. In 1855 sowed it to wheat and raised forty-five bushels. In 1856 sowed it to barley and had thirty-four bushels. In 1855 plowed, manured and worked the ground the same as the piece in 1854, and planted it to corn, and in 1856 sowed it broadcast to wheat. It lodged badly, but yielded twenty and a half bushels of wheat, and two tons of straw. The barley weighed forty-seven pounds, and the wheat fifty-five pounds to the bushel.

Wheat.—Plowing,	$2 00
Sowing, harrowing and rolling,	2 00
Mowing, raking and carting to barn,	3 00

Thrashing, ...		$3 00
		$10 00
20½ bushels wheat at $2, . .	$35 87½	
Profit, ...		25 87½
		$35 87½

Barley.—Plowing, sowing, harrowing and harvesting,		$10 00
34 bushels barley at 80 cents, .	$27 20	
Profit, ...		17 20
		$27 20

John C. Clement planted an acre of corn on a piece of ground planted to corn the year before. Soil, a sandy loam; planted about the middle of May, and harvested October 2; top stalks were cut off. Raised two hundred and seven and three-fourths bushels of ears of corn, worth forty cents per bushel. He does not state how he manured or with what, or how much, or at what expense he grew the crop.

J. O. Tilton raised an acre of corn on a gravelly soil, underlaid by an open and gravelly subsoil. The soil eight or ten inches deep, light in color, and free from stone. It was a piece of ground that had laid waste for five or six years in consequence of grass seed not taking. Last year it was plowed and planted to potatoes. Spread on ten loads of long manure and plowed in, and then put about twenty loads of hog manure in the hill. Planted May 13; harvested last of September and first of October. Produce one hundred and eighty-three bushels of ears of corn. Expense of planting, hoeing and harvest, ing, $20. Crop valued at $80. The details are not such as to enable one to determine the profit.

Matthew Ritchie grew corn on a slaty soil, light and friable, and of a dark color. The subsoil is a rotten ledge. It is rather stony, and has been planted to corn two consecutive years. About eight cords of green manure was spread and plowed in six inches deep. The corn was planted June first, in hills three and a half feet each way. It was cultivated and hoed twice, and harvested the last of September. "Cut it up at the roots when it was well turned. This I consider the cheapest way to harvest corn and renders the fodder of most value. Produce one hundred and fifty-three bushels of ears."

Plowing,		$1 50
Manure,		16 00
Planting,		2 50
Hoeing,		4 00
Cutting up and shocking,		2 00
Carting in and husking,		5 00
		$31 00
Corn, at 67 cents,	$51 00	
Fodder,	10 00	
	$61 00	
Profit,		30 00
		$61 00

Crosby Clements grew potatoes on a sandy loam, light and friable, and underlaid with an open subsoil. They were planted on a sod, plowed five or six inches deep, and manured with two and a half cords of stable manure. Planted the first week in May, in rows three feet apart, the hills twenty inches apart; hoed once, and one and a half bushels of plaster applied. Harvested in September; the produce, one hundred and sixty-nine bushels, weighing ten thousand one hundred and forty pounds.

Value of crop,	$84 50
Cost of crop,	30 00
Profit,	$54 50

Asa Shaw asked for premium on a piece of barley. The soil a light, yellow loam, twelve inches deep, underlaid by a hard subsoil. It grew a crop of hops the previous year, and no manure was applied the present year. The barley was of the two rowed variety, sowed June 10th, and with three and a half bushels of seed to one hundred and forty-eight square rods, and harvested the last of August. Produce, twenty-five bushels, and one ton of straw.

Value of crop,	$18 75

Cost of crop,	$8 50
Profit,	$10 25

Asa Shaw grew a crop of Orange carrots, on a light, yellow loam, twelve inches deep, of granite formation. Potatoes were produced on it the previous year; plowed ten inches deep, and four cart-loads of manure applied to one eighth of an acre. It was sown in drills two feet apart, June 1st, and cultivated with the hoe. Harvested in October; the produce, eighty-eight bushels.

Value of crop,	$26 00
Cost of crop,	5 00

Isaiah Avery produced a crop of corn, on a sandy loam, light and friable, the stones in which are a mixture of granite and slate. It was planted on a sod, plowed six inches deep, to which was applied thirty loads of barn-yard manure and muck; was planted May 20th, three and a half feet between the rows, and three feet between the hills. Hoed twice, and eight bushels of ashes applied as a top-dressing. Harvested October 8th. Produce, sixty bushels, weighing three thousand three hundred pounds.

Value of crop,	$60 00
Cost of crop,	17 00
Profit,	$43 00

PENOBSCOT & AROOSTOOK UNION AG. SOC.

The returns from this Society, offering but a scanty supply of matter of general interest to the farmers of the State, it is with the more pleasure that I insert here a paper read before the Board of Agriculture at its recent session in January, on the soil, climate and capabilities of a portion of Aroostook county, a part of our State presenting inducements for settlers rarely equalled elsewhere.

This paper, descriptive of "Golden Ridge plantation" and vicinity, is by Morgan L. Gerry, a resident.

Description of Golden Ridge plantation. The land lies mostly in moderate swales, ascending and descending gradually; the higher part covered with a tall heavy growth, being a mixture of rock maple, beech, yellow birch, with occasionally spruce, hemlock, fir and cedar. Soil, a deep, light, sandy loam, well adapted to cereal products of all kinds, and generally free from frost. Descending lower into the valley, the growth above named, becomes mixed with hemlock, spruce, fir, elm, brown ash and cedar. Soil, a deep rich loam, well adapted to grass and vegetables of all kinds which grow in Maine, or the northern States generally. Nature has so constituted the lots, that they are generally made up of the above variety; so that each farmer has his up and low land, for the most part attended with ever living water. Corn may be raised here as well as elsewhere with proper care. I have invariably raised good corn whenever I have attempted.

Having observed that the fall rains do more injury than frost, my manner of proceeding is as follows, as in the case of the last season, viz:—When I found my corn sufficiently hard, so that the frost would not injure it, I cut the stalks, and let it stand till after the first frost, being careful to take it in, before the heavy rains. I had forty bushels to the acre, weighing on an average, sixty-one pounds per bushel; also eight tons of pumpkins on the same acre. In more backward seasons I apply the same rule which I was frequently under the necessity of doing while in Massachusetts, viz: by cutting up and stocking, leaving it to ripen, taking care to take in before the late rains; and on the whole, have succeeded as safely and as well as in Massachusetts, except requiring a little more attention and care. My neighbor, Mr. Alfred Cushman, says he has raised eighty-six bushels of ears of corn this season from a half acre of plowed land. The Hon. Ira Fish of Patten, and Mr. Lovejoy of Crystal plantation, with many others, have raised good crops of corn, the amount I have not ascertained, all of which is as ripe and probably as heavy as any raised in Maine. Although our land in this section is capable of producing large crops, as has generally been the case formerly, the past season has failed, in consequence of the continued rains and foggy weather. Some farmers have come up to from twenty to thirty bushels of wheat to the acre, while a majority fall much below.

The root crop also has been affected as above, notwithstanding many have raised fair crops. A. Cushman has raised from one-quarter of an acre two hundred and seventeen bushels of carrots, being somewhat injured by rust. I have also been informed that Mr. Twitchell of Shin pond, so called, has raised seven hundred bushels of potatoes from about two acres. Mr. Isaac Robinson of Crystal plantation, from one acre, raised two hundred bushels, called the Irish apple, all free from rot. By the same, twelve bushels of Russia onions on six rods of land. Mr. H. N. Darling raised at the rate of eighty bushels of white beans to the acre. I would remark that beans do well here. I have every season, for fourteen years, raised a surplus above what I use in my family.

There is no necessity for want or famine in the Aroostook valley. So long as we mind our own business, stick to our farms and do our duty, with the help of Providence we are sure to prosper. I have never known a single instance, when the above rule has been complied with, where the individual has not risen in wealth and comfort, although he may have commenced poor. I know of no place where such persons receive more or even as much remuneration for their labor. But I am sorry to say that there are many who depend on the lumbering operations or shingle making for support. If they would but turn their attention to the raising of stock and the cultivation of their farms, become members of an agricultural institution, strive together with brotherly kindness, my word for it, they would find themselves in one of the gardens of Eden before they were aware of it.

Wheat-growing has been neglected in this vicinity for the want of mills. I am happy to say that we are improving in this respect, Mr. Joseph Heald of Patten, having recently built a good flour mill, with two run of stones. Also, Messrs. Gardner, Coburn & Jackman of the same place, have just completed another, with two run. And I soon hope to see Number Three and Island Falls, improving in the same way. At the former place there is now a saw mill and grist mill, with one run of stones, built by myself, and now owned by Spaulding Robinson, Esq.; and at the latter place there is a superior water power.

Our neat stock are mostly of the native breed; in many cases crossed with English blood, Messrs. Fish and Wiggin of Patten, having introduced some years since, some of the North Devon and Durham blood, which has made a perceptible improvement. Also, Mr. Abner Weeks, some few years, introduced a bull which originated from the Province of New Brunswick, and which gives very perceptible credit in the improvement of stock in his vicinity. Sheep are mostly of mixed blood, although not inferior to sheep of better kinds in older settled places. This country is well adapted to the growth of sheep, they being generally vigorous and healthy.

The wool growers of this vicinity, are indebted to Gen. Wm. H. Smith and Peter Plunket of Benedicta, and James Brown, Esq., of Dayton, for the introduction of foreign breeds, which are improving our flocks. I am happy to say, that Hon. Ira Fish has recently obtained some of the full blood Cotswold, with other varieties, which will eventually farther improve our flocks. Swine are generally of native breed, although the Suffolk has been introduced by Mr. Levi Sewall of Golden Ridge, which is making a very perceptible improvement.

Colts are raised extensively and considered profitable. As to the breed, I am unable to say what one prevails most. Our colts command high prices at the age of three to six years; being crossed with the foreign blood of horses from the neighboring Provinces and elsewhere.

HORTICULTURAL PRODUCTS.

The first premium was awarded to Alfred Cushman, by the Penobscot and Aroostook Agricultural Society, for the best specimens of grafted fruit—the Red Astrachan. It was produced from trees six years from the seed, grafted at the ground, and on a deep and stony soil, with no other cultivation than hoeing the first year after being planted.

This society awarded its first premium on "Native Apples," to H. N. Darling. The trees were ten years old from the seed, on a deep loam, rather wet, and free from stones. They were set in the spring, on ground cropped for twelve years, and manured at the rate of twenty loads of manure to the acre. The last year it was sown to grain, and the grass kept down about the roots of the trees.

DAIRY PRODUCTS.

Mrs. L. C. Blake was awarded the society's first premium on cheese, but there is nothing peculiar stated in relation to its manufacture, except a caution against the excessive use of rennet.

Mrs. H. N. Darling lets the milk stand thirty-six hours in the summer, and forty-eight hours in the fall, for cream, and packs the butter close in glass or stone jars.

Mrs. Hancock who took the society's first premium, is careful to skim the milk before it becomes sour, and churns the cream the third day after being taken from the milk.

NORTH AROOSTOOK AG. SOCIETY.

Much credit is due this society located (as seems generally supposed) at the farthest verge of "down east," for the full and intelligible returns which are received from competitors, it being evident that the aim is rather to give information, than merely to comply with the requirements of law, by giving a statement in form only.

Their perusal has greatly strengthened the desire that the facilities for successful agriculture, which Aroostook possesses in so large measure, may not only be more generally appreciated, but that *its resources may be fully developed* by those of our citizens now so anxiously desiring to prove the fertility of western prairies.

The only serious obstacle seems to be the lack of communication, and there can be no doubt that a railroad from Bangor to some suitable terminus in Aroostook, would add untold millions to the wealth of the State, and it is earnestly to be hoped that the day is not distant, when such a road will be in successful operation.

Expenditures, 1856.

Premiums on live stock, ...	$141 00
" " agricultural operations, . .	26 50
" " crops, ...	75 25
" " machinery, implements and manufactures,	37 75
Miscellaneous expenditures, . . .	21 00
	$301 50

FROM REPORTS OF COMMITTEES.

HORSES.

The committee on horses, in presenting their report to the society, deem it proper to suggest a few remarks, trusting they may receive the favorable consideration of those engaged in the improvement of our breed of horses; and if the committee can satisfy the farmer that, to raise a colt until it is four years old, that will command an hundred dollars, is as feasible and cheap as to raise one worth fifty dollars, then a point of profit and economy is settled, and a fact that will guide him in selecting the stock to breed from, that will insure the best result. And now, let the farmers of this society, for we are addressing them particularly, look at this subject in the light it deserves, and employ the means they so amply possess, and we venture the opinion that they will receive a more sure and ample compensation than from any other department of stock-raising. The history and merits of the horse have been too long familiarized in many business pursuits, to require an account here, of his origin. The orator and the poet have coupled him with the achievements of the hero, and the laurels of the conqueror. The bare mention of "old Whity," calls to memory the history of the past, and fixes a character to the present subject. The man that goes forward in the various branches of stock-raising, taking the foreground in the improvement of the horse, the ox, and the cow, is a benefactor to his town, county, and State. Let us all, then, who appreciate the most serviceable of all animals, the horse, give countenance and encouragement to the growth and improvement of that animal. And if the committee could but awaken in the minds of this society the interest due to the subject here considered, they confidently believe that in a few years, new resources would be presented within its boundaries, beyond present computation; and we are happy to say, that on this occasion, the number of horses of all grades entered for premium, was greater than in any former year.

JOEL BEAN, *Chairman.*

NEAT STOCK.

The committee on oxen and steers report, that there were twenty entries of oxen and steers, and the cattle presented made a very creditable appearance, taking into consideration the fact that many of the best cattle have been driven out of county by drovers.

FREEMAN ELLIS, JR., *Chairman.*

COWS AND HEIFERS.

The committee on cows and heifers report, that there were thirty-nine entries of cows and heifers, and are proud to say that in their judgment, the show of stock in this department surpasses in quality that of any other show since the society has been in existence, and may safely challenge any other county in the State to produce better cows and heifers than were presented the present year.

JOSEPH BLAKE, *Chairman.*

COWS.

The committee on town cows report, that but three entries of ten cows each were made by David Foster of Presque Isle, Hiram Stevens of Letter D, and Joel Bean of Letter G. The exhibition was very creditable, giving conclusive evidence that the farmers in those towns take the true view, that it is better to raise one good cow than two poor ones. The committee are of opinion that the stock of Aroostook will compare favorably with that of any other portion of the State, and were much gratified to witness these evidences of the thrift and good management on the part of farmers, in this department of husbandry.

JOSEPH B. HALL, *Chairman.*

SWINE.

The committee on swine report, that only nine entries were made, and express their regret that so little interest was manifested in this important but too much neglected branch of farming; but the specimens of the swinish race submitted, show conclusively that Aroostook can successfully compete with any other part of New England in raising swine, and that farmers, at the present high prices of pork, would do well to devote more attention to its growth.

SAMUEL LAMPSON, *Chairman.*

From Statements on Neat Stock.

J. W. Haines says: "The calves I offer for premium are a cross of Durham and Hereford; the oldest is eight months, and the other four and a half months. The oldest was taken from its dam at birth, and had one-half of its mother's milk for three weeks. It was then fed with about the same amount of skim milk and oatmeal gruel until he was three months old. Since that time he has had hay and grass. I believe this method of raising calves to be about half the expense of the common way of feeding. The other has had about half the milk of its dam with what hay and grass it would eat. Their dams were fed with hay and straw, with the addition of a few roots for three months previous to their birth.

I believe these breeds to be the best I am acquainted with for the following reasons: They have good dispositions and are very docile. The oxen are first rate workers and fatten easily. The cows are good milkers, and have strong constitutions, and when dry, have a great tendency to take on fat.

The cows I offer for premium are of the Durham and Hereford breed, raised by myself. They have hay and straw in winter, in the spring I give them some roots or meal, in summer, grass. I believe them to be superior to the common breed for the dairy, yoke and shambles.

The cows I offer for milk, the oldest one is ten years, and is a full blood Durham. The other is five years old; she is three-fourths Durham and one-fourth Hereford. In regard to their milking properties, I consider them superior to the common breed. They will give milk until very near the time of calving. In the months of June and July they give about eighteen quarts per day. Average quantity, eight quarts per day for ten months. I made in June ten and one-half pounds of butter in one week from each cow.

John Allen also highly commends a cross of Hereford and Durham, as well adapted to the yoke and for beef. He also speaks in high terms of grade Durhams for beef and milk.

M. C. Bolster showed oxen, a cross of Durham and Hereford, which he commends as best for work and beef.

E. S. Fowler, B. Cummings and others, also speak of this cross as highly desirable.

Hiram Stevens showed a stock cow—a Durham, which he commends for a breeder and milker, and of very early maturity. He commends grade Durhams especially as milkers.

B. Ratcliffe says of his seven years old grade Durham cow, that she gives twenty-four quarts per day in June and July, and twenty quarts through the season.

Cyrus Pomeroy says—I enter a bull two years old, a cross of Durham and Devon, raised by myself. My mode of feeding is that ordinarily pursued by farmers here, hay and straw. I prefer this breed to others because I have tested its qualifications; fast walker—girts six feet two inches.

SWINE. J. W. Haines exhibited swine, a cross of Berkshire and Essex; and also a cross of Berkshire and Bedford. They fatten easily, are quiet and not at all troublesome about escaping from pasture. Says he can make pork from them at two-thirds of the cost that he can with common breeds.

SHEEP. Mr. Haines showed a cross of Merino, Dishley and Southdowns—deems them superior nurses—often give twins. The ewes shear four to six pounds, and the bucks and wethers eight to ten pounds, and dress off over one hundred pounds.

Mr. Whitney exhibited the "Perley" breed, which "shear four and a half to seven pounds."

HORSES. There seems much interest in rearing horses. The tenor of the statements are generally in favor of the "Messenger and French," "French Messenger and Morgan," and some others of local names.

DAIRY PRODUCE.

Mrs. J. Cloudman says:—The cheese offered for premium was made the first week in August, from the milk of five cows. The nights milk was strained, and allowed to stand until morning, when it was warmed to the heat of milk just taken from the cow, to which was added the mornings milk, and rennet enough to bring it to a curd in twenty minutes. The curd was then broken up, and the whey being dipped off, I let it stand seven hours, occasionally cutting it, and pressing out the whey. I then chop it, and add nearly a tea-cupful of salt; let it remain in press twenty-four hours, and keep in a dry, cool place; dressed with pork fat and pepper.

Mrs. D. Foster says:—This cheese was made the first week in August, from the milk of five cows. Immediately after straining the milk at night, I added rennet enough to bring it to a curd in from thirty to forty minutes, and let it stand till morning; then broke it up very gently with the hand, and dipped it off; served the morning's milk the same, and added it to the night's curd; let it drain till four o'clock in the afternoon, occasionally cutting it, and keeping a light weight on it to press out the whey; then chop it, and add a little more than half of a common sized tea-cupful of ground rock salt; press twenty-four hours; the milk and curd were never any warmer than when taken from the cow; kept in a dry, warm place, and turned once a day, and dressed with butter.

John Allen's dairy consists of seven cows. The June butter was made as follows: We set our milk in tin pans; let it set twenty-four to forty-eight hours; skim as clear from milk as possible, and churn; our butter comes in from fifteen to thirty minutes; take our butter out of the churn, wash clean from buttermilk, and salt one ounce to the pound; set away in a cool place twenty-four hours, then work it over and pack down, and keep it from the air as much as possible.

Hiram Stevens says his dairy consists of four cows, and adds: This cheese was made from the milk of four cows; they are of the Durham and Hereford breed. I feed my cows on hay in winter, and grass in summer, with salt under cover so that they can go to it any time they choose, and also go under cover out of the way of flies and storm. My dairy being small, it has cost me more to make good cheese, of a decent size, than it would, had it been large enough to make one cheese a day. It was made as follows: Evening's milk was strained into a cheese tub; rennet put in sufficient to bring the curd in twenty minutes; it is then carefully put into a cheese basket to drain the whey from the curd; the morning's milk is managed in the same way, when the two curds are put together and hung in in the milk-room, in the cellar, until the next morning, when it is warmed by putting it into warm whey, then pressed with another curd in the same way. You will see that it takes two days to make a cheese. If I had eight cows in my dairy, I could make two with about the same labor.

Mrs. Stevens says:—My dairy consists of four cows only; they are mostly of Durham blood; I think them best adapted for dairy purposes. I feed English hay in winter—towards spring I feed roots of some kind, before calving. In summer, English grass. I set the milk in a room finished in the cellar until the cream rises; churn twice in a week, salt to taste. I have never made experiments in churning milk, nor in the temperature of cream when churning. My mode of preserving butter is as follows:—After it is churned, work the buttermilk all out, salt to taste (as I consider the quantity of salt immaterial about preserving it.) Butter made in June I pack solid, in layers about two inches thick, with a thin layer of fine salt between; when the jar or firkin is filled, I set it in a clean, sweet pork barrel, make a strong pickle of salt, and pour in sufficient to cover the butter.

Mrs. J. Hardeson says:—I think, in making good butter, much depends on the milker. Care should be taken that the udder is well cleaned before milking. Strain into shoal pans. It requires some judgment in getting the right temperature on the cream before churning. I seldom churn longer than twenty minutes. Salt to my own taste—about one-sixteenth salt; let it set twenty-four hours, then work it over.

FROM STATEMENTS ON CROPS.

Joseph Blake says: "I enter for premium a crop of wheat raised the past season. My soil is a light loam, rather fine, and when dried under the action of the sun is light and friable, and about fifteen inches in depth. It is of a dark color. The subsoil is hard, but not clayey. As the formation of all the soil in this region is limestone, the most of the stones found in my soil are of that nature. But stones are not very plenty. It is spring wheat; the land was cleared, a crop of wheat, and a crop of oats was taken off, and was then pastured about eight years; was broken up one year ago last June and cross plowed in the fall after. Last spring it was lightly cross plowed again, and the wheat sowed on. It was plowed about five inches the first time, and the expense of all the plowing of four acres was about $16; and the whole expense after the grain was sowed is about $21; no manure was applied; the land has never been subsoiled or underdrained. I sowed the seed on the 8th day of May, and it was sowed without any soaking or other preparation, broadcast, and about one and a half bushels to the acre. The grain was harvested about the middle of August, and was not hard all of it when it was cut. The produce of the four acres was seventy-four bushels, or eighteen and one-half bushels to the acre. The expense of raising, harvesting and threshing, was about $45 at a fair estimate, and the produce, seventy-four bushels, is worth $2 per bushel, amounting to $148; leaving a net profit of $103."

Of another acre in wheat he says:—For a description of the soil I refer you to my statement on four acres of spring wheat, except that it is what we call "new land." The wood has been mostly cut off for fuel; the brush, &c., was burnt September, 1855, and the clearing was completed last spring. I estimate the cost of clearing the acre at $3.50. I sowed it on the 11th of May, and put on one and three-fourths bushels of seed. It was harvested about the middle of August. I estimate as follows:

Clearing, ...	$3 50
Sowing and harrowing, . .	3 00
Harvesting, ...	3 00
	$9 50

I raised on this acre thirty-three bushels, thrasher's measure, and this would leave me a profit as follows:

Labor,		$9 50
Seed,		3 50
		13 00
33 bushels wheat at $2,	$66 00	
Leaving net profit of,		$53 00

Mr. Blake sowed one and one-eighth of an acre of oats: "For description of soil, I refer you to my statements on wheat, especially the one on one acre wheat, as the oats were on the same tract of cleared land. I sowed the seed on the 12th day of May, and put on to one hundred and eighty square rods, three and three-fourths bushels of oats; harvested them in August; raised on the one hundred and eighty square rods ninety-two bushels, or eighty-one and seven-ninths bushels to the acre; and I submit the following estimae:

Clearing land,		$4 00
Sowing and harrowing,		3 00
Harvesting and thrashing,		8 50
Seed, 3¾ bushels,		1 88
		17 38
92 bushels oats at 45 cents,	$41 40	
Leaving a balance of		$24 02

John Allen raised beans "on one acre of ground, light loam, sowed with wheat last year; after being broken up in the spring, and lightly manured after the wheat was taken off, the ground was plowed, and last spring was cross plowed and lightly manured, and planted with white, yellow-eyed beans, June 3d, in drills about two feet apart; put two beans in a place, and about six to eight inches apart; took about one bushel for an acre; harvested them the last of September; had on an acre twenty-seven bushels of excellent beans, a sample of which is presented."

He also applied for premium on "carrots raised on one-fourth of an acre; soil, sandy loam, very few small round stones in it; soil about one foot deep, is fine, and when dried under the action of the sun, is light and friable; was plowed, manured and planted with corn last year; last spring was manured with barn manure, plowed deep, and sowed in drills, with the rows about eighteen inches apart, June 6th, 1856, came up rather thin, but grew very large; October 19th finished harvesting; had one hundred and sixty bushels of large, handsome carrots."

In another statement, he says:—The crop I present for premium is clover seed, raised on seven acres of land, a dry, sandy loam; the previous crop was oats; lightly manured. I had on seven acres, twenty hundred and twenty-four pounds clover seed, which sold for fifteen cents per pound; came to $303.60; cost of cutting and getting out, estimated at $20 per acre, is $140 out of $303.60, leave $163.60 net profit; weight of seed, sixty-one pounds per bushel.

Joel Bean says: "The corn grew on new burnt land; I harrowed three times before planting; planted on the 15th day of May, five quarts of corn on one acre and five square rods of land on the 10th of June; hoed it, and raised fifty-one bushels that was fit to grind, and six of soft.

The peas grew on land broken up in the fall of 1855; sowed two bushels and raised twenty-three.

The buckwheat grew on land broken up in the fall of 1855; I put on five loads of manure to the acre, and harrowed it in; sowed one bushel and raised forty-one bushels and one peck.

The rye grew on new burnt land; I sowed one and a half bushels and raised twenty-one bushels from one acre."

Cost of growing corn, ...		$10 00
" " peas, ...		4 00
" " buckwheat, . . .		5 00
" " rye (not stated, estimated at) .		3 00
Cost of seed, ...		5 00
Manure, ...		5 00
		$32 00
26 bushels of corn, $1, . . .	$26 00	
23 " peas, $1.25, . . .	28 75	
41 " buckwheat, 50 cents, . .	20 50	
21 " rye, $1, . . .	21 00	
	$96 25	
Profit, ...		$64 25

Stillman Gordon asked a premium on a crop of wheat grown on a reddish yellow loam, light and friable, about eighteen inches deep, stones limestone and slate, underlaid with a subsoil of gravel and clay. It is newly burnt land. The seed was the Siberian or tea wheat, washed and rolled in ashes, and sowed broadcast, with one and a half bushels of seed. Produce, twenty-five bushels per acre, weighing sixty pounds per bushel.

Clearing land, ...		$10 00
Sowing, ...		3 00
Seed, ...		4 00
Harvesting, ...		4 00
Threshing, ...		5 00
		$26 00
25 bushels wheat, $2, . . .	$50 00	
2½ tons straw, ...	5 00	
	$55 00	
Profit, ...		$29 00

E. S. Fowler raised two hundred bushels of potatoes on one acre, planted on a yellow loam, with a gravelly subsoil, where it is not underlaid by a ledge. He applied twelve loads of manure, hoed twice, and top-dressed with one bushel of plaster.

Cost of labor and manure, ...		$30 00
Cost of seed, ...		4 00
		$34 00
200 bushels potatoes, 50 cents, . .	$100 00	
Profit, ...		$66 00

B. Cummings asked a premium on a crop of potatoes and turnips on new land. Potatoes planted May 5th, and the turnips June 29th. Potatoes planted about two feet apart each way. Turnips sowed broadcast. Potatoes hoed once and well hilled. Harvested the potatoes September 15th, and obtained two hundred and sixty-four bushels. Turnips harvested between October 10th and the 20th; produce, ten hundred and forty-five bushels.

Harrowing two acres of potatoes, . . .	$4 00
Planting, 6½ days at $1.25, ...	8 13

Hoeing, 10 days at $1.25,		$12 50
Digging, 11 days at 1.25,		13 75
Seed, 20 bushels at 50 cents,		10 00
Use of team,		1 50
		49 88
264 bushels potatoes at 50 cents,	$132 00	
Profit,	82 12	
Harvesting two acres turnips,		4 00
Seed and sowing,		1 75
Digging and hauling 22 days, at 1.25,		27 50
		$33 25
1045 bushels turnips at 12½,	130 62½	
Profit,		$97 37½

Mr. Cummings also asked for premium on a crop of oats and rough buckwheat. The land was in oats and potatoes the year before. The oats were sown May 10th, and the buckwheat May 20th. Seed was three bushels per acre of oats, and one bushel of buckwheat. Oats harvested August 28th, and buckwheat September 15th. Produce, two hundred and forty-eight bushels of oats on three acres, or eighty-two and two-thirds bushels per acre; and forty-four bushels of buckwheat on one acre.

Seed for one acre of oats,		$1 50
Sowing,		50
Harrowing,		2 00
Cradling and binding,		3 00
Thrashing,		5 00
		$12 00
82⅔ bushels oats,	$41 33½	
Profit,		$29 33½

He also cultivated a crop of white beans and small Canada corn, on a yellow loam, with which is mixed limestone and slate. It is a first crop on a burn. Planted corn May 14th, and beans May 28th. The rows of beans were two feet apart, and the hills eighteen inches. The corn was planted three feet between the rows, and two feet between the hills. Harvested September 10th and 20th. The corn was cut up at the roots and stooked.

Produce, thirteen and a half bushels beans on one-fourth of an acre, and twenty-eight bushels of corn on an acre.

Planting beans,		$1 50
Seed,		85
Weeding,		50
Harvesting and thrashing,		3 50
Planting corn, 2 days,		2 50
Harrowing,		2 00
Weeding, 1 day,		1 25
Cutting up, 1½ days,		1 87
Hauling and husking 4½ days,		5 62
		19 59
13½ bushels beans at $3,	$40 50	
28 bushels corn at 1.33,	37 24	
	$77 74	
Profit,		$58 15

J. W. Haines asked a premium on a crop of oats and ruta baga turnips. They were grown on a yellow loam, two feet deep, in which are scattered stones of granite, limestone and slate, is newly burnt land. The oats were sown about the middle of May, and the turnips the last of June. Produce, six hundred and forty bushels turnips, sixty pounds to the bushel; eighty-nine and a half bushels oats, thirty-three pounds to the bushel.

Sowing oats,		$1 50
Seed,		1 35
Harvesting,		9 00
Sowing and harvesting turnips,		10 00
		$21 85
89½ bushels oats at 45 cents,	$40 27	
640 bushels turnips at 12½ cents,	80 00	
	$120 27	
Profit,		$98 42

Mr. Haines also grew a crop of oats and peas on new land, from which three crops of grain had been taken off. Produce, thirty-five bushels, weighing forty-five pounds to the bushel.

Plowing, ...	$1 50
Seed, ...	2 62
Sowing and harrowing, ...	1 00
Harvesting and threshing, ...	4 00
	$9 12

35 bushels oats and peas, at 87½ cents, $30.62½.

Profit, ...	$21 50

Sumner Whitney says: The crop of oats and peas I offer for premium was raised on three acres of land. Oats were raised on the land last year. I had one hundred bushels from three acres, being thirty-three and one-third bushels per acre, weighing forty-two pounds per bushel. Soil, yellow loam. It was plowed in the fall of 1855, about six inches deep. It was sowed the middle of May, four bushels to the acre; soil from one to two feet deep. Last year there was one bushel of plaster sowed per acre. This year there was not any top dressing applied. The cost of raising was as follows:

Plowing, ...	$1 50
Seed, 4 bushels, at 87 cents, . . .	3 48
Harrowing and sowing, ...	1 00
Harvesting, ...	4 00
	$9 98
Cr. by 33⅓ bushels oats and peas, at 87 cents per bus.,	28 71
	$13 73

WASHINGTON CO. AG. SOCIETY.

Washington county Show and Fair held at Pembroke, September 30, and October 1st, 1856.

AMOUNT OF PREMIUMS AWARDED.

On neat stock,	$101 00
horses, mares and colts,	54 00
sheep and swine,	21 00
vegetables,	16 00
grains, seed, &c.,	15 50
fruit,	12 50
butter, cheese, honey and bread,	16 50
plowing,	17 00
household goods and sundries,	61 00
ladies' riding, saddle, riding dress and silver spoons.	
Total amount of premiums,	$405 00

Among the choice animals exhibited at this show was a black colt, which obtained the highest premium, the property of Robert Burns, sired by the famous old "Black Hawk" of Vermont, since deceased, out of a mare that was sired by "General Taylor," one of old Black Hawk's colts. The dam of her mother was of the Messenger stock, making the colt 11-16ths Black Hawk, and the balance Messenger.

Ichabod Stoddard exhibited grade Durhams, which he "thinks, with good keeping, will compete with any other breed or cross either for milch cows or oxen, combining size, beauty, strength and docility."

Thompson Lincoln showed Durhams and grade Durhams, which he "regards as superior for milking qualities and for oxen, being docile, quick and kind in the yoke."

The committee on plowing, in their report strongly recommend the Michigan plow, as "surpassing all others in its manner of working."

From Statements on Crops.

Mr. Hugh Porter of Pembroke, on a light, gravelly subsoil, plowed ten inches deep, manured with compost of muck and barnyard manure in the furrow, planted in drills thirty-three inches apart and ten inches in the drills, with seed cut and rolled in plaster 10th and 14th of May, cultivated and hoed once, raised one hundred and eighty-five bushels sound potatoes, and ten bushels inferior, on one acre. Some rotted and were not gathered.

On similar soil he also planted corn, and it will be remembered that this locality is in the extreme eastern part of the State, and probably the least favorable of any within its limits for the production of this crop. He says he "raised sixty-three bushels of ears of ripe corn on a little less than half an acre of green sward, plowed in the fall, harrowed in the spring; plowed in a heavy coat of manure, harrowed fine, and dressed with poudrette in part and hog manure part, in the hills, three feet apart; the hog manuring proved to be the best corn; topped the first of September; tops when dry, one horse load; eleven loads corn in the husk and pumpins; harvested the 14th October. Ashes and plaster applied to the hills at each hoeing."

William D. Dana certified to a crop of ruta bagas grown on clayey loam, with red sandstone subsoil. The land, hard and stiff if worked when wet, light and friable if worked when dry or when the frost is all out. The soil of a light color and from two and a half to three feet deep. It is free from stones. The land was in grass in 1852, yielding less than one-half ton of hay per acre. Used as pasture in 1853 and '54. Cropped with oats in 1855, no manure being used. In the fall of 1855 plowed ten inches deep and harrowed. In June, 1856, it was plowed, harrowed and drilled at the expense of $6 per acre. Placed in the drills three hundred pounds of guano per acre, at a cost of $12 for the guano and labor of applying it. The guano was covered eight to ten inches, and on the 20th of June sowed ruta baga (purple top) in drills two and a half feet apart, and ten inches between the plants; four pounds seed used to the acre. The after culture was simply cultivation and hoeing twice, and thinning the plants to ten apart as soon as the second leaves had started. On November 1st harvested three hundred and twenty-five bushels on half an acre. Value of turnips at residence, ten cents a bushel. Thinks the value of the tops and the improvement of the land equals the cost of manure.

Plowing and harrowing twice, . .	$6 00
Cultivating and hoeing twice, . .	10 00
Thinning, ...	6 00
Harvesting, ...	8 00
Raising and harvesting, . . .	$30 00

Nathan Pattangall certified to a crop of beans, grown on a loam, which is coarse, friable and light. The soil is about three feet deep, and yellow. The subsoil is hard and gravelly. The previous cultivation was manure spread and plowed in, and a crop of corn and beans. The plowing for the previous crop was eleven inches. The manure for this crop was spread before plowing, at the rate of ten cords to the acre. The manure worth $2 a cord. The beans were planted the first of June, in drills two and a half feet apart, at the rate of one bushel to the acre. The crop was hoed but once. On the last of September harvested forty bushels to the acre, which were worth, at his residence, $2.50 per bushel.

George O. Lincoln certifies to a crop of beets, grown on sandy soil, light, fine and friable, of a dark color and two feet deep. The subsoil is open. In 1854 it was plowed, harrowed and sowed with grain; in 1855 applied compost and cropped with cabbages. In 1855 planted on the 15th of May, in drills three and a half feet apart; long blood beet seed, three-fourths of a pound to the acre; hoed three times, and the produce was four hundred bushels to the acre. Cost per acre, $10.

N. P. Pattangall certified to a crop of ruta bagas, grown on clayey loam, resting on clay subsoil. The land had for ten years been in grass; plowed eight inches deep, harrowed and furrowed, and applied twelve cords of manure composted from sheep, hog and barn-yard manure, and mixed with swamp muck and rock-weed; planted the last of June, with two pounds of ruta baga seed to the acre, in drills three feet apart, with no previous preparation of seed, and no after culture except thinning. Produce, five hundred and thirty-three bushels per acre. The crop was harvested on the first of November. Mr. P. does not state the expense of the crop. Value of crop, twenty cents per bushel.

William D. Dana of Perry, obtained premium on a nursery of fruit and ornamental trees and shrubs, grown on a sandy loam, resting on a red sandstone subsoil. The soil is dark, one and a half or two feet deep, strong, and free from stones since they were picked off. It had been cultivated with root crops for two years. It was then thoroughly spaded and well manured. Last year the land produced three hundred and twenty-five bushels of carrots on one-fourth of an acre. The soil has been underdrained sufficiently to carry off all the surplus water. It was spaded previous to planting the trees as deep as the the subsoil at an expense of $15 per acre. The rows of trees are three and a half feet apart. All the after culture was one spading and then hoeing enough to keep the weeds subdued. The crop not being taken off, the items of expense cannot be named. The value at my residence is from twenty-five cents to $1 apiece at suitable age for transplanting.

MAINE POMOLOGICAL SOCIETY.

WINTER EXHIBITION JANUARY 28TH, 1857.

REPORTS OF COMMITTEES.

From the list of premiums offered on this occasion, your committee award as follows:

For largest and best exhibition of fruit, first premium, F. Glazier, Jr., for thirteen varieties of apples.

Second premium, D. Lancaster, six varieties.

For best bushel apples, first premium, F. Glazier, Jr., Ribston pippin.

For best peck apples, first premium, F. Glazier, Jr., Baldwins.

Second premium, D. Lancaster, Ribston pippin.

For best dish apples, first premium, F. Glazier, Jr., twelve varieties.

For best dish Bellflowers, first premium, F. Glazier, Jr.

For best dish Baldwins, first premium, Russell Eaton.

For best dish R. I. Greenings, first premium, D. A. Fairbanks.

For best pot flowers, first preminm, F. Glazier, Jr., (*Lamarque rose.*)

Second premium, Miss Anna A. Eaton, (*Carnation.*)

For best boquet, first premium, Miss A. A. Eaton.

Second premium, Miss L. P. Glazier.

Gratuities, to W. H. Parlin, for collection of apples, to Mrs. Page, Bath, for jar preserved figs.

To contributors of fruit and other articles, not recipients of your bounties, we award the thanks of the society.

Four varieties of pears, only, were on exhibition, all of which were presented by F. Glazier, Jr.

Two dishes of Isabella grapes were presented. Your committee wish to be understood as declining to encourage the growth of this variety in this State, in the open air. It is a late variety, and can never arrive at maturity in this State, except under peculiarly favorable circumstances.

Wm. Caldwell of Augusta, showed a dish of American shell-bark Hickory nuts, well matured to all outward indications. Not being provided with a nut-cracker, we were not permitted to examine within. The tree producing the above, is hardy in all parts of Maine, so far as the growth of the tree is concerned, and for beauty and cleanliness is not surpassed as a shade tree.

We are advised that the preserved figs, presented by Mrs. Page of Bath, were grown in that city, on bushes four or five years old, brought from North Carolina. The plants have been placed in cellar in autumn, and set again in the open air in spring.

While your committee have no ambition to detain you long, we feel constrained on this occasion to offer a few remarks and suggestions on the general subject, though we may not be able to shed upon it any new light, nor say anything but what may have been well said before.

To be satisfied that the *fruit world* does make progress, we need not take an observation embracing a series of years. We who had the pleasure of looking in upon the exhibition of fruits the past season, at the session of the American Pomological Congress,—such important local societies as the Boston Horticultural,—the Genesee Valley Horticultural,—and the lesser collections seen at our State Exhibition, and the shows in our several counties, can entertain no doubts upon this point.

That progress in this great interest is made in the nation,—that new and better varieties of fruit do appear in our State,—that occasionally a new specimen is laid on the tables of this society, to please the eye and tickle the palates of a tasting committee,—that a few active spirits, true to their patriotism, are ever laboring in the good work in our midst, is cause for true and deep gratulation.

But on the subject of fruit-growing in Maine, we need "line upon line, and precept upon precept." We cannot rest satisfied—*we must not*—with the past rate of progress.

We resolve never to be guilty of neglect of a manifest duty, by *holding our peace,* so long as we see but here and there an individual among the thousands who own the soil of Maine, who is giving to the culture of fruit that portion of his time and attention, that its real importance demands.

But what are the inducements, the encouragements, we hold out to the little and the great landholders, that shall lead them to cumber their grounds with fruit-trees?

We name *first*—because most potent to call the man to action—*pecuniary gain—sure profit.*

No man in his senses, to-day, fails to appreciate the wisdom, and do honor to the men, who planted and cared for the better class of orchards that now grace the valley of the Kennebec. No one but sees and knows, that in favorable seasons, these orchards are sources of revenue to their owners, greater than all their farms besides.

In the middle and western States, with past experience, farmers are encouraged to increase their orchards beyond the ratio of other improvements, and that of population, when their chance for a full crop is only one in two or three years. With us is not the chance greater? In the northern counties, in some localities, we are allowed to say the apple crop *never* fails. But for the past few days of inclement weather, more specimens would now be before us, and some from orchards that have produced fair specimens of choice varieties for an unbroken series of about forty years. Other portions of the State are not entirely exempt from casual blights, and occasional failures, through natural causes.

The past season, with very general complaint of a scanty apple crop, the dealers in Boston have penetrated to the back settlements in Maine, there finding fair choice apples in considerable quantity, which they have bought at round prices, and transported over long roads to the cars and steamers.

The greater surety of successive good crops in our locality, over portions of our country warmed by earlier and more fickle spring, is a matter that is being well established and very generally understood.

Our apples compare favorably with those produced in warmer latitudes.

At Rochester, New York, in September last, was probably collected a greater number of varieties than was ever before exhibited on this continent, or in the world.

We may be safe in assuming that the eye of man never before took in at one view, so rich a display of fruits. Nearly every State of the Union, not forgetting the State and Territories washed by the Pacific, was there represented. Very unassumingly, in that monster assemblage, were laid some fifteen varieties of apples from the highlands of northern Maine—hardly noticeable there, but from the circumstance that none others could claim origin or growth from so high a latitude. Curiosity at once prompted us to seek out and institute a comparison between our humble contribution, and something from the South. We found for our purpose, a collection of about thirty varieties from North Carolina. In justice to that collection, produced and presented by one gentleman, we must say that, for size, beauty, flavor, and exquisite aroma, it surpassed everything we had ever seen.

After indulging in entire freedom, in the only real pleasurable test of goodness in fruit, we were ready to yield the palm to the *highly finished* southern apples. But, for the reputation of Maine—a spot of earth laid out in the cold—a good place to emigrate *from*—the veteran pomologists of our country, and of the age, came to the rescue, and pronounced our northern apples finer in grain, firmer in texture, richer in substance, the elements of goodness more concentrated, a fruit equally mature, and more desirable than that grown at the South.

Our Wilders, Hoveys, Barrys, Berckmans', Brinckles, Thomas' and Downings, place on her brow a crown that no earthly power can wrest from her.

The character of our apples for their fine keeping qualities having been established—the surety of production when our trees are once set and grown—an ever ready market through all future time so certainly opened, that all the hill-sides in Maine in one consolidated orchard, producing to its maximum, might in vain strive to glut, and what remains to be said, in the direction of accelerated, continuous, energetic effort to increased production?

The character of our apples is established generally on examination of specimens grown on trees that have been *stuck* *out*, and thereafter let alone. Were we to question the exhibitors of fruit on any occasion, not excepting the present, we should learn that in most cases apples are grown on trees that are treated with just the opposite of what all admit to be good care and culture when applied to the other crops of the farm.

The difference in quantity and quality of apples produced on trees well cared for, and those *let alone*, is not generally appreciated, for the contrast is rarely drawn.

Other inducements and incentives for greatly increased production of fruit, such as physiological and moral considerations, would be set before you with pleasure on this occasion, but your committee, called to duty on short notice, are not prepared to treat the subject as it deserves, or in a manner satisfactory to themselves or you. Neither can they extend remarks beyond apples. Other fruits are not to be overlooked, neglected or forgotten on this annual occasion, nor at any other time or season.

We adjure the farmers and horticulturists—all land-holders in Maine—to consider well the critical times on which we have fallen. The vigor and strength, the very life-blood of the State, is oozing out at every pore, in the ceaseless stream of emigration in whose current our sons and daughters are mingling.

Inquire as often and as much as you please of your Legislature, "the causes that operate against the more rapid settlement of our public lands;" tax your wits for ways and means as you may, our conviction is, that all the barriers you can raise to emigration will fail to be so effective as the means within your reach to foster "the love of home," that is so happily implanted within us.

Plant your landed estates with orchards, with the view to their division and sub-division—beautify and enrich your homes of opulence, or of more humble pretensions, by planting trees. Multiply the attractions of existing abodes, by surrounding them with greatly increased means of support.

The temptations abroad that allure men and lead them captive, through their love of gain, are to be met, in the rural districts, only by improved appliances to culture, under the light of science, resulting in vastly increased production.

We submit to you for your consideration, the culture of fruit in connection with these momentous considerations, trusting the subject commends itself to your judgment, as a matter of prime and vital moment.

All which is respectfully submitted.

CALVIN CHAMBERLAIN, *for the Committee.*

REPORT ON SEEDLING APPLES.

The committee appointed to examine the samples of seedling apples exhibited, beg leave to report:

That they found six varieties of this class of fruit on exhibition, all of very good quality. Three of these specimens were presented by Daniel Lancaster, Esq., of Farmingdale. One of these apples is of very superior quality, and worthy of general cultivation. It is of medium size, somewhat flattened at the stem, which is short and set in a shallow cavity. Calyx small, and set in a rather narrow and shallow basin. In color, it resembles the golden russet, though more inclined to green, and the russet on the sunny side underlaid with a dark red, inclining to a purple hue. The flesh is white, fine grained, compact, with a very small core, mild acid, crisp and juicy, with a rich aroma. We name it the Lancaster russet, and recommend a gratuity to Mr. Lancaster. One of the other apples is rather above medium size, oblong in form, stalk quite long and slender and set in a narrow cavity, calyx very small. In color it is red, sub-acid, and of very good flavor, but rather dry. The third is above medium size, roundish, and somewhat flattened; stalk rather long and slender, set in a shallow cavity; calyx small, and set in a shallow basin; flesh white, sub-acid, juicy, and of medium quality.

W. H. Parlin, Esq., of Winthrop, presented specimen of seedling apples, which he calls the "Phœnix." It is above medium size, roundish, and considerably flattened; stalk long, and quite slender, and set in a broad and deep cavity; calyx large, and set in a broad, shallow basin. It is a green apple, flesh white, rather spongy, but juicy, sub-acid, and of very good flavor. It is worthy of consideration and more extended trial. We recommend a gratuity to Mr. Parlin.

The remaining specimens were presented by F. Glazier, Jr., of Hallowell. One of them is a very good apple, but too small to be profitable for general cultivation. The other is a sweet apple, somewhat above medium size, of oblong form, yellowish color, with a slight blush on the sunny side; stalk rather long and stout, set in a narrow and deep cavity; calyx rather large and set in a very shallow basin; flesh white, compact and juicy, with a rich saccharine flavor. Early winter. We would recommend a gratuity to Mr. Glazier.

Your committee would recommend the more extended cultivation of seedling apples, in particular, for the purpose of obtaining new varieties suited to our own climate, soil and situation. But to secure any valuable practical results, it is requisite that the great laws of reproduction be rigidly regarded. If real and substantial progress in this direction be sought, not only must seeds be selected from the best *varieties*, but from the choicest *specimens* of each of these varieties. Like produces like, no less in the vegetable than in the animal kingdom. If we would produce choice trees and choice fruit, we must plant the seeds of specimens which exhibit the highest degree of vigor, and the most marked characteristics.

At the present time, it seems especially desirable to multiply late fall and winter varieties of apples, particularly late fall varieties; as we have few, if any, of this class of fruit that is in every respect just what we want. It is also desirable to multiply the varieties of winter apples that are red in color, because such apples are most sought after in foreign markets. Maine, we believe, is destined to become the great fruit-growing State of the Union, for shipment abroad. The apples grown in this State have a compactness of flesh, and a richness of flavor, which render them peculiarly adapted to this purpose, and cause them to be much sought after.

Although the law which governs the production of new varieties of fruit is but imperfectly understood, enough is known to indicate the direction in which we are to look for improvement. If improvement is sought in winter fruit, select seeds from winter apples which have been the least exposed to hybridization from summer or fall varieties, and of the color you wish to produce. If you wish to produce a late fall variety, select seeds from fall apples well exposed to hybridization from the most desirable winter varieties. In this way, it is believed, new and choice varieties of apples may be produced, which are better suited to our climate, soil and situation, than any we now have, valuable as many of these are.

Your committee feel that they cannot too strongly urge this matter on the attention of the cultivators of our soil, nor they be stimulated to too earnest endeavors in this direction; for, sure we are, it will ultimate in the accumulation of an amount of wealth, comfort, rational enjoyment and contentment, of which few have, at present, any conception, and widely in contrast with the present state of things.

When Maine is appropriated to the growth of fruit and food-producing animals—her hill-sides covered with orchards bearing the choicest fruits, her meadows loaded with luxuriant crops of grass, and her stables multiplied and filled with the choicest domestic animals, as the Creator designed, and made her soil to secure, then will her sons and her daughters cling to homes embowered in shrubbery, and surrounded with the beautiful; and when the biting frosts, the howling winds, the driving storms and drifting snows of winter come, they will delight to gather in the "vestment warm" to read and to think, and enjoy social life, with the fruit-basket loaded with blushing apples on the "chimney piece," instead of hieing to distant climes to feed on "hog and hominy," and be shaken out of their boots with fever and ague.

DARIUS FORBES, *for the Committee.*

REPORT OF THE TRANSACTIONS

Of the Maine Board of Agriculture at its Session Jan., 1857.

The Board met as prescribed by law, at Augusta, January 21, 1857. There were present the following members legally elected and entitled to seats:

ROBERT MARTIN of Androscoggin;
JOSEPH D. PIKE of Aroostook;
E. G. BUXTON, of Cumberland;
JOSEPH KEITH of Franklin;
HORACE PARLIN of Kennebec;
EBEN COBB of Lincoln;
DARIUS FORBES of Oxford;
E. F. CRANE of Penobscot;
CHARLES J. GILMAN of Sagadahoc;
THOMAS FULLER of Somerset;
NATHAN PATTANGALL of Washington;
THOMAS W. CUNNINGHAM, of Waldo;
S. L. GOODALE, of York.

Also His Excellency HANNIBAL HAMLIN, Governor, and ALDEN JACKSON, Esq., Secretary of State, members *ex officiis*.

The following persons were also present, elected by their respective Societies, but not being legally entitled to seats under the late act, were admitted as honorary members, and invited to assist in the deliberations and labors:

HENRY LITTLE, Bangor Horticultural Society;
D. A. FAIRBANKS, Maine Pomological and Horticultural;
WILLIAM R. HERSEY, North Penobscot;
SEWARD DILL, North Franklin;
ISAAC W. BRITTON, North Kennebec;
NATHAN FOSTER, South Kennebec;
MORGAN L. GERRY, Penobscot and Aroostook Union;
W. B. SNOW, West Somerset.

Robert Martin was elected Chairman, and presided until permanent officers were chosen, who were

Hannibal Hamlin, *President;*
Robert Martin, *Vice President;*
S. L. Goodale, *Secretary.*

A business committee was appointed who subsequently reported topics for discussion, which were severally referred to committees, as follows:

1. To inquire what amendments, in the present law relating to the Board of Agriculture, are expedient and necessary to secure its highest efficiency. Also to prepare a schedule of the duties to be performed by the Secretary.

Committee.—Hamlin, Little, Buxton, Gilman, Forbes.

2. To inquire what the Board ought to recommend in relation to the trial of the speed of horses, at our Agricultural Shows.

3. To inquire whether the Board ought to take any action relative to the exhibition of female equestrian skill, at our Agricultural Shows.

Committee.—Crane, Fuller, Parlin.

4. To report on the question as to what is the immediate object to be aimed at, in our legislative and associated action in behalf of agriculture.

Committee.—Forbes, Pattangall, Gerry.

5. To inquire whether it be advisable to recommend any legislative provision, to enable the farmers of the State more easily and at low rates of interest, to obtain capital to invest in their business.

Cmmittee.—Fairbanks, Cobb, Britton.

6. To inquire into the expediency of this Board arranging the time for the usual Shows of the Agricultural Societies, in the State, so that they may not interfere with each other, and recommend the same to the adoption of the several Societies.

Committee.—Britton, Gerry, Goodale.

7. To inquire whether it would be expedient for this Board to recommend to the Legislature the appointment of a special

commission, to inquire into the cause or causes which hinder the more rapid settlement of the State lands, and to report on the same to the next Legislature.

Committee.—Little, Dill, Buxton.

8. To consider the bill at the close of the Secretary's report, and recommend such action on it as may be deemed necessary and expedient.

Committee.—Goodale, Jackson, Pattangall, Gilman, Forbes.

9. To inquire whether this Board will recommend any action by the Legislature for the encouragement of underdraining and thorough draining of lands in this State.

Committee.—Goodale, Little, Hersey.

10. To inquire whether any legislation is necessary to secure more complete and perfect agricultural statistics of this State.

Committee.—Chamberlain, Keith, Buxton.

11. To inquire what this Board ought to recommend in relation to the trial of working oxen at our County Shows.

Committee.—Fuller, Foster, Pike.

12. To inquire into the expediency of recommending legislative action to encourage the formation and support of Farmers' Clubs.

Committee.—Goodale, Foster, Dill.

A committee on Rules of Order reported the following, which were adopted:

RULES OF ORDER.

PRESIDENT.

It shall be the duty of the President, and in his absence, of the Vice President, to preside at meetings of the Board, according to the customary parliamentary rules, which govern all deliberative assemblies.

SECRETARY.

In case of absence of the President and Vice President, the Secretary shall preside until a President "pro tempore" is chosen.

The Secretary shall keep the records of the transactions of the Board, and perform the other duties prescribed by the act establishing the Board of Agriculture.

DUTIES, RIGHTS AND DECORUM OF MEMBERS.

1. When a member speaks, he shall rise and address the President.

2. No member shall interrupt another while speaking, except to call to order, or to correct a mistake.

3. When a member makes a motion, he shall put the same in writing, if requested by the President.

4. When a motion is made and seconded, it shall be received and considered by the Board, but not otherwise.

5. When a motion has been made and carried in the affirmative, or negative, it shall not be in order for any member to move a reconsideration, who voted in the minority; but any member, who voted in the majority, may move a reconsideration, provided he do it on the same day; but a motion to reconsider shall be in order only once, on the same question.

A communication from Monsieur Vattamere was submitted to the Board, relating to the appointment of a commissioner to represent the State at the Exposition of Agriculture, at Paris, the present year. It was referred to a committee, consisting of Messrs. Gilman, Forbes, and Parlin, who subsequently reported, recommending to the Legislature the appointment of one or more commissioners for said purpose. (This recommendation was favorably entertained by the Legislature.)

A discussion having arisen regarding the expediency of continuing the use of such blanks, to be filled by competitors for premiums, as were adopted and distributed last year; the whole subject was finally referred to the decision of the Secretary.

An official communication from the Legislature was received, granting the use of the State Library to members of the Board, on the same conditions as to members of the Legislature.

Voted, To distribute, at this time, twenty-five copies of the Secretary's Report to each member of the Board—and the distribution was accordingly made.

On motion of Mr. Crane,

Resolved, That a committee be raised to urge upon the Legislature the passage of the following resolve:

Resolved, That the Secretary of the Board of Agriculture be and hereby is authorized to cause to be printed, under his direction, ten thousand additional copies of his report for 1856, to be distributed among the citizens of the State—and Messrs. Crane, Martin, and Cobb, were appointed said committee.

Voted, That the remaining copies of the report of the Secretary of the Board, for 1856, together with any additional number of the same which may be printed, (unless otherwise ordered,) be distributed under the direction of the Secretary.

A communication was received from Dr. E. Holmes, Secretary of the Maine State Agricultural Society, stating that the volume of transactions for 1854 was ready for distribution—and Messrs. Forbes, Gilman, and Cobb, were appointed a committee to apportion and distribute the same to the several societies, which duty they discharged.

Messrs. Pattangall, Keith, and Gerry, were appointed a committee to divide and distribute among the members a quantity of seeds, presented by Governor Hamlin; and also, some seed of the Chinese Sugar Cane, from the Patent Office, through Dr. E. Holmes, Secretary of the State Agricultural Society—and the distribution was accordingly made.

On motion of Mr. Dill,

Resolved, That the Board recommend to the several Agricultural Societies, the offer of liberal premiums, to encourage the planting and culture of ornamental trees by road-sides, in parks, commons, and about churches and school-houses.

The following votes were passed, appointing Standing Committees to report, after the close of the session, on various topics; and *all other persons in the State, interested in these or kindred subjects, are invited to cooperate, by communicating facts, views and experiments,* either to the chairmen of the several committees, or directly to the Secretary, (at Saco,) as may be more convenient:

Voted, That Messrs. E. G. Buxton of Yarmouth, Charles J. Gilman, Eben. Cobb, and Nathan Pattangall, be a committee charged to investigate the use and value of *marine manures*, and to report to the Secretary of this Board during the present season, their results and conclusions.

Voted, That Messrs. Charles J. Gilman of Brunswick. Darius Forbes and C. Chamberlain, be a committee to report to the Secretary during the present season facts and conclusions regarding the efficacy and utility of *concentrated and specific manures*.

Voted, That Messrs. Nathan Foster of Gardiner, H. Parlin, Thomas Fuller, I. W. Britton and Seward Dill, be a committee to report to the Secretary during the present season facts and conclusions regarding *the best and most economical method of preserving and applying solid and liquid manures*.

Voted, That Messrs. Darius Forbes of South Paris, H. Little, S. Dill and Thomas Fuller, be a committee to inquire into *the value of swamp or bog muck and the best method of treating and composting the same* as a cheap and efficient manure, and report to the Secretary of the Board during the present season.

Voted, That C. Chamberlain of Foxcroft, Moses Taber and D. T. Stevens, be a committee to report to the Secretary of this Board *plans and suggestions regarding the best mode of constructing barns and barn cellars*.

Voted, That E. G. Buxton of Yarmouth, B. F. Nourse and Warren Sparrow, be a committee to report to the Secretary of this Board during the present season *on drainage and deep tillage*.

Voted, That Messrs. I. W. Britton of Winslow, Moses Taber and B. T. Dinsmore, be a committee to report to the Secretary of this Board the present season, *on the varieties of sheep best adapted to our State*, and also *on the expediency of raising sheep for mutton rather than wool*.

Voted, That Calvin Chamberlain of Foxcroft, D. Taber, Darius Forbes, and D. A. Fairbanks, be a committee charged to report to the Secretary of this Board regarding *the varieties of apples best adapted to the climate and soils of Maine;* also what they would recommend as to procuring trees from out of the State, and the best methods of propagation.

Voted, That Henry Little of Bangor, Moses Call, B. F. Nourse, Warren Sparrow, and Nathan Nye, be a committee to report to the Secretary of this Board on the best varieties of pears adapted to the soil and climate of Maine; also what kinds should be grown on the quince stock, and the mode of cultivating the same, and as to the propriety of procuring young trees from out of the State.

Voted, That William Gore of Freeport, A. Noyes, H. Little, and A. Johnston, Jr., be a committee to report to the Secretary of this Board, on or before the 1st of November next, *on the best varieties of hardy grapes for open culture*, and such varieties only as will, in their opinion, *mature fully* in this State.

Voted, That Seward Dill of Phillips, Robert Martin and Darius Forbes, be a committee to report to the Secretary of this Board on the best method of cultivating the cranberry, with the cost per acre of planting, and the difficulties and profits which attend its culture.

The committee to whom was referred the subject of amendments to the present law constituting the Board of Agriculture (Topic No. 1 of the business committee,) reported a bill, which with a few slight amendments, was subsequently enacted by the Legislature, as follows:

An Act to amend an act entitled "An Act to establish a Board of Agriculture."

Be it enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECTION 1. The members of the board of agriculture, and the secretary thereof, shall continue in office until the expiration of the term for which they were elected.

SECT. 2. The state board of agriculture shall, after the expiration of the term of office of the present members, consist of members who shall be elected and classified, as follows: one member may be elected by each incorporated agricultural and horticultural society in the state, which maintains an annual exhibition, and expends not less than one hundred and fifty dollars in premiums for the encouragement of agriculture, horticulture, and the arts connected therewith. Said members shall hold their office for the term of three years from the day of the annual meeting of the board, next after their election, except as hereinafter provided, and shall be elected by ballot at the annual meetings or fairs of such societies, or at any regular meeting thereof called for such purpose; and they shall receive and produce as evidence of membership, a certificate of election signed by the president and secretary of such society, and also a certificate from the treasurer of the society, signed and sworn to, before a justice of the peace, that the society which he represents has actually expended during the previous year not less than one hundred and fifty dollars, as above required: *provided, however*, that if the annual exhibition of such society shall have been, by the advice of the board of agriculture, merged in that of the state agricultural society, the last named certificate shall not be required; and in case of any vacancy occurring in the representation of any society, the same may be filled by appointment, by the president and secretary of such society.

SECT. 3. At the next annual meeting of the board of agriculture, the members shall be divided as equally as may be, into three classes. The term of office of the first class shall expire at the end of one year, of the second class at the end of two years, the members of each class to be designated by lot.

SECT. 4. The board of agriculture shall meet at the State House in Augusta, annually, on the third Wednesday of January, and they are hereby empowered each year to elect a suitable person to act as secretary of the board, and to prescribe and determine his duties, and in case of vacancy by death or otherwise, the governor with advice of his council, is hereby empowered to fill the same. And all reports and returns required by law to be made by said societies, shall be made and returned to the secretary of said board. The compensation of the secretary shall be eight hundred dollars per annum, and such necessary traveling and incidental expenses as shall accrue in the discharge of his duties, an account thereof being first audited and allowed by the governor and council. And the compensation of the members of the board shall be the same as that of members of the legislature, for a term not exceeding ten days, provided that if a member of the board shall also be a member or officer of the legislature, he shall receive compensation in but one capacity.

SECT. 5. It shall be the duty of said board to investigate all such subjects relating to agriculture, horticulture and the arts connected therewith, in this state, as they may think proper; and it is hereby empowered to take, hold in trust, and exercise control over any donation or bequests that may be made to it for promoting agricultural education, or the general interests of husbandry; and the said board shall annually, on or before the first Wednesday of January, by its secretary, submit to the legislature a detailed report of its doings, together with an abstract or digest of the returns of the several agricultural and horticultural societies and of such statistics as he may be able to collect; with such recommendations and suggestions as the interest of agriculture may be deemed to require, and cause to be printed under his direction and control not more than ten thousand copies of the same, one thousand copies thereof being for the use of the legislature, and the remainder for distribution under the direction of the board among the people of the state.

SECT. 6. The governor shall, from time to time, draw his warrant on the treasurer for such sums of money as may be necessary to defray the salaries and expenses provided for by this act, an account thereof having been first rendered by the secretary of the board, and audited by the executive council; and a sum not exceeding one thousand seven hundred dollars annually is hereby appropriated to meet such expenses.

SECT. 7. All acts and parts of acts inconsistent with this act, are hereby repealed.

SECT. 8. This act shall take effect from and after its approval by the governor.

[Approved April 6, 1857.]

The reports on Topics No. 2 and 3 first made, were, together with that on Topic No. 11, referred to a new committee whose report is as follows:

The committee to whom was referred the reports of former committees on topics No. 2 and 3, and No. 11, in conference, with that deliberation they have been able to bestow on the subjects, agree in the following expression of their opinion. The topics are embraced in these words:

"2d. To inquire what the Board ought to recommend in relation to the trial of the speed of horses at our Agricultural Shows.

3d. To inquire whether the Board ought to take any action relative to the exhibition of female equestrian skill, at our Agricultural Shows.

11th. To inquire what the Board ought to recommend in relation to the trial of oxen at our Agricultural Shows."

The subject of "horse-racing," or "horse-trotting," under the patronage of Agricultural Societies, has engrossed a considerable share of public attention for some months past. Agricultural papers, particularly, have been a medium through which the masses have been reached by those who assume to guide, direct, or manufacture public opinion. These missives sown broadcast over the land, are nearly all on the side condemnatory of this new feature of our shows. Assume, if you please, that a *park* and *course*, as used, is justly viewed with suspicion, as a thing fruitful in the dissemination of immorality and sin, by those to whose care and keeping is committed the momentous subject of public morals.

The aged, the wise, and virtuous, direct in that road, and point to that goal to which all our aspirations should tend,—that attainment, compared to which all secular objects are but secondary.

Is it strange, that the sedate moralist, taking a stand to scan "Young America" as he is being developed on occasions of public hilarity, should occasionally find his arbitrary rules of decorum kicked by the antics cut through the propelling force of that exuberant effervescence of animal spirits that finds the escape valve only on two or three days in three hundred and sixty-five?

After scanning the heap of complaint and caution before the public, including that flow of cheap talk made by niggardly, collapsed bigots, soured by the erection of a tight fence between their "corporosity" and a free show, we would proceed with our subject, bending only to our convictions of duty, to sustain, at all hazards, a wholesome, moral public sentiment.

It is the conviction of the committee, that the practice of some societies, in the offering of high premiums on fast horses, to be matched on the *course*, or allowing their grounds to be used by individuals for that purpose in connection with their shows, is one calculated to alarm the moralist.

By a brief consideration of the subject, may we not hope to find an intermediate ground on which extremes may meet, to the satisfaction of all the patrons of our fairs?

Who can wish that the noblest of our domestic animals should be excluded from our cattle shows? But a few years since it was a matter of general remark and regret that so few horses were on exhibition. The lack then was more in sufficient encouragement, than in the scarcity of worthy specimens.

It being desirable that the horse should be on exhibition, the question arises: How shall he be shown so as to do justice to himself, his owner, and the society for whose benefit he is introduced?

Shall the committee proceed to award premiums on these animals, without examining them in all the prominent characteristics which make up their value? How is one to judge of speed and power of endurance in a horse? How valid is the objection to all horse trotting, that it engenders betting? It is true that it may be made a subject of betting, and so may many other things that are met in connection with every exhibition of the kind. We ever have among us individuals who will engage in lotteries in defiance of law and wholesome public opinion. Such may bet on the speed of a horse, on the strength of a pair of oxen, the product of a cow, or the weight of swine; but should betting occur among the few, ought the society to be held answerable for it? Would it not be unwise to exclude all trial of speed of horses from our shows, even on moral considerations?

People of all ages, sexes and occupations, view with pleasure the graceful movements of the trotting horse. They assemble from the farm, the shop, and from their several vocations, where they have toiled through the heat of summer, to enjoy a gala day, and they find a healthy and satisfactory recreation in a well conducted agricultural exhibition.

To exclude the excitement of the exhibition of horses would be to abate a very attractive feature of the show, and would also have a decided tendency to multiply *horse shows*,—where may be found any amount of trotting, betting, profanity and intemperance. Our youth would find the way there, and instead of witnessing a fair and orderly trial of speed under the care of parents and guardians, whose presence and dignity would serve as a wholesome restraint, they would meet with more of the brute in man.

Would it not be better to seek to control this amusement under the fostering care of agricultural societies, rather than disown and cast it off to assume a more reckless, exclusive and objectionable form? It is not an easy matter to decide where competition shall begin and where end. The whole exhibition is one of competition, and was established for the commendable purpose of "provoking one another to good works."*

Interest alone will induce societies to return to that course of procedure that shall abide the test of public opinion. *Immediate* pecuniary advantage cannot be a sufficient inducement to the continuance of a practice that may jeopardize the usefulness of agricultural societies.

The courses on our fair grounds may serve a useful purpose by being used for showing the action of horses exhibited under the entries of saddle horses, road horses, or other classifications. They may also be made available for other uses. A closing scene at the fair, of great attractiveness, may be had by a well arranged procession of the prize animals moved round the course at a moderate pace, preceded by a cavalcade of ladies, and line of horses and carriages; and as a reminder of our puritan origin, the antiquarian should be allowed to contribute to the public entertainment by an exhibition of the customs of "the times that tried men's souls," by inviting into the ranks a few farmers, with their wives mounted behind them, in the costume of the early days of the "Province of Maine," followed by a few country people riding to market with their panniers filled with butter, eggs, meats, and vegetables.

---

* The committee acknowledge their obligation to a writer in the New England Farmer, whose lucid and fair treatment of this subject, came very opportunely under their notice.

As the subject of ladies appearing on horseback at the fairs is legitimately before us, we submit in addition to what has been said, that it is a matter for congratulation, rather than cause for regret, that a course has been adopted, to induce ladies to mingle in the scenes of our agricultural exhibitions, where the encouraging, cheering, and restraining influence of their presence is so desirable. Riding on horseback is a pleasant, innocent, and healthful recreation. It is so desirable an accomplishment for young ladies, that in many localities schools are sustained to perfect them in it. Though it is desirable that our wives and daughters should aid and cheer us by their attendance on our fairs through their love for the cause, yet we are so obtuse as to see no objection to offering prizes encouraging proficiency and excellence in the management of the horse, that does not weigh with equal force against the practice of giving prizes in school for attainments in declamation, composition, or other useful accomplishments.

The slim attempts at ridicule, by representing ladies as an "agricultural production," which the societies are trying to increase and improve upon by offering premiums for the best specimens, is sufficiently answered in the remark, that whether agricultural or horticultural, the cultivator deems it most for his interest, and that of the community, to devote his care and labor to the production of such varieties of vegetables, fruits, and *flowers*, as best flourish and mature in the open air.

On topic 11th, the committee report:

That they have long entertained the opinion that the method of testing the value of working oxen, as practiced at some of our cattle shows, needs modification. It is not because the practice is "barbarous," or that the oxen may be delivered from "an hour of torture," that objection is made to the taking, as proof of the best pair of oxen, their ability to move the largest load of stones on the drag; but because it is not the criterion by which alone such a conclusion can reasonably be drawn.

We do agree with those who hold it as the extreme of cruelty, to require an ox to exert all his powers in moving a load of stones, or a load of anything else required to be moved.

We believe that oxen that have been trained to that kind of labor, do it with as little liability to injury, as a man who has been accustomed to it, may lift heavy bodies, or perform other labor in which great physical force is required.

The fact of a pair of oxen having moved the largest load of stones on the drag, affords to our minds no better proof of their being the best pair for the common purposes for which oxen are used, than the fact of a man's having shouldered a barrel of pork, is proof of his being the best farm laborer, He may do that, and know no more how to plow, plant, sow, hoe, mow, or do any common farm labor, than a roving Arab.

It is within the knowledge and recollection of a member of the committee, that a first premium of an agricultural society in this State was given for a pair of oxen, their power on the drag being made the test of their value, whose habits were so entirely uncontrollable, that a man's life was in danger in passing between them to detach them from the cart, and when at home, all the hands on the farm were not sufficient to prevent their leaving the field when at work, even though they had to go over a stone wall, taking the cart with them. This is an extreme case, and is cited only to show that injustice may be done by requiring only a single test, and *that* a performance on the drag.

The trial of the strength of oxen is one of the most attractive features of our exhibitions. What your committee conceive to be objectionable, is, that strength is allowed so prominent a place as to conceal the other equal or more important qualities.

It may abate nothing from the interest incited by the exhibition of these useful animals, to so change or modify the usual regulations governing the same, as to best show their activity, docility, training, promptness and ease to adapt themselves to any kind of labor required, as well as their power.

Your committee respectfully recommend to the societies, that they require of competitors for premiums on working oxen, to show their qualities as above, by moving them forward and backward, turning them to the right and to the left without a load, and without the use of the whip or goad. By exercising them on the plow, the holder driving, and turning at the end of furrows, to the right and to the left. By bringing them to the cart, first on the left, then on the right, —by moving the load forward and backward; lastly, by showing their power and activity at the drag.

As an incentive to further improvement, we would recommend that a premium be offered for the best disciplined pair of oxen, without reference to size, age or other property; and as the usefulness of animals, whether quadrupeds or bipeds, hinges on their early training and early habits, liberal premiums should be offered to boys for the exhibition of well trained steers.

By a well digested course of procedure, for which the above is offered as suggestive, we believe that nothing of attractiveness in our exhibitions would be lost, and much of use, gained.

CALVIN CHAMBERLAIN, NATHAN FOSTER, EBEN. COBB,	*Committee.*

REPORT ON TOPIC NO. 4.

The committee to whom was referrred the question as to what should be the immediate aim of all legislative and associated action in behalf of agriculture, would beg leave to say, that they have had that subject under consideration, and set forth the following as their views in relation to that subject:

Your committee cannot resist the conviction, that at the present stage of our progress, this question is one of vast moment to the cause of agricultural improvement. They think, that on the answer to this question, must depend the character of all intelligent and consistent action for the promotion of this great interest. And it seems to them, that thus far in our efforts, no well-defined and distinctive principle has underlaid our doings. At least, if we look at one class of our efforts, it would seem, that if any principle underlaid them, as a controling and directing power, it is one of a very questionable character.

Your committee, therefore, would beg leave to point out, first of all, what they regard as a questionable element in our endeavors to aid agriculture. The element referred to, is the application of *artificial stimulants* to production. We see this, in the conditions on which premiums are offered by most of our agricultural societies, and in the bounties that have been offered by our State, on the production of wheat and flax. These were mere artificial stimulants to increase the production of the one, and to introduce the cultivation of the other.

Now we take the ground, that this method of procedure is wrong, and can, therefore, in the long run, be attended only with bad results. We might at once proceed to show, by an appeal to facts, that past experience has proved it to be so; but we prefer, first of all, to refer to the principle involved, and show what is its inherent tendency.

There is a natural stimulant to production, as to everything else, which is always healthful, and that is *demand*. The great acting and reacting force of business and trade is *demand and supply*. This is the great and fundamental law of business—that demand creates supply, and that too at *remunerating* prices. Whenever production is stimulated, by any cause, beyond demand, or under circumstances when it is not remunerative, or it cannot be sustained, the result is disastrous;

and when it is turned into channels where demand does not exist, the result is the same. Everything of this kind is unnatural, and as such, must be productive of evil consequences.

We see this fact illustrated in all the departments of human life and industry, and in every organized body. Whenever the human body, while in health, is subjected to the operation of artificial stimulants, a reaction takes place, which carries it as far below the healthy point of action as it went above, and invariably adds to this evil, that of excessive wear and exhaustion of the vital forces.

Agriculture is not an exception to this general law. As proof of this, take the case of the bounty on wheat in 1836–7. That acted as a stimulant, and the next year carried production up to a point never before reached, or anything near it, in the State, and made a heavier drain on the State treasury than all our other agricultural operations have from the beginning. What good did it do? We mean permanent good.

We know it showed what Maine can do on an occasion; but it did not show what she can do as a *permanent* and annual thing. No such production as was there attained, could, by any possibility, under the circumstances, be sustained. It was not even repealed; for the very next year, there was an immense falling off, and so it continued down the scale, till it reached a point as far below the healthy point, as it went above. From that low point, production has increased, under the stimulant of demand, and as available means would justify, till production has climbed up the scale, to a very respectable position—probably quite as high as *profitable* production will justify.

So in regard to the production of flax. The attempt to force its production by a bounty to encourage its growth, has proved a total failure, as might have been anticipated, simply because there is no demand for it. If it is grown, it has no market. And it is probable, that the few men who obtained premiums on its production, are the poorer for it. Years ago much flax was grown in this State, and mills were erected to dress it; but all these have disappeared. Why? Simply because the demand was not such as to produce remunerating prices on its growth and preparation for market.

We think no reflecting mind can fail to perceive, that all this business of offering premiums or bounties on the production of certain specific articles or crops, has been productive of no good, to say the least; and the reason why is equally obvious.

And yet, as most of our agricultural societies conduct their affairs, they are laboring to gain results in the same direction. They aim by their premiums, to stimulate production, and differ from State bounties only, in that they apply it to all sorts of production and manufactures, from a tomato to a field of corn,—from a pin-cushion to a steam engine.

Now your committee believe, that so long as this is the aim of our agricultural efforts, they will prove to be comparative failures, as they have been thus far; or at best they will accomplish but a tithe of the good they might and ought to do.

Your committee believe, what agriculture needs, is not the application of artificial stimulants to production, but the *accumulation and diffusion* of agricultural *intelligence*—the collection and communication to our farmers of that knowledge which will enable them to determine what peculiar and most profitable departments of husbandry their lands and their circumstances require them to adopt and pursue: and how to produce the largest returns from their operations at the least cost. We believe this is the only way in which the end sought can be attained, and thus leave demand to stimulate and direct supply.

In conformity with this view, we are of the opinion, that the immediate and direct object of all our legislation and the action of all our agricultural societies, should be the collection and diffusion of agricultural information. We have the machinery to gain this end already in working order. We have only to put it to working in the right direction, and with the right object in view. Here are our agricultural societies all organized and in working order, and in just the right position to accumulate stores of the most important knowledge for the farmers of the State. And here is the Board of Agriculture—an institution of the State—to take this knowledge, digest, arrange, and scatter it broadcast over the State, and to suggest the particular points on which knowledge is needed, wherein our societies fail most in their endeavors to gain this object, and point out the remedy, and to call the attention of the Legislature, from time to time, to such matters of legislation as may be deemed necessary, the most effectually to accomplish the ends sought, and to remedy any defects that may be discovered in the working of things.

Having in view these two leading objects, and making all else subsidary, a distinct and separate field of operation is laid out before the Board of Agriculture and our Agricultural Societies, entirely distinct and independent of each other, in one sense, and yet, in another, intimately and inseperably united—united by a mutual dependence on each other as parts of a great system. Thus they are necessary parts of a great whole, neither being competent to the end sought, in the highest degree, independent of the other, and yet both having fields of labor so distinct, that there is no liability of their infringing the one on the other.

Our position then is this: What farmers need most of all, is not an increased and artificial stimulant to production, because it is unnatural and at best can only be temporary in the very nature of things, and always liable to a reaction, which makes the last state worse than the first, and because *demand* is the only reliable and healthful stimulus to production—but the thing needed is KNOWLEDGE—knowledge that will enable farmers to *understand* their business, the peculiarities of their soils and their circumstances, and how to adapt their operations to them, and thus secure the best and most profitable results.

To the accumulation and diffusion of this knowledge, all our agricultural organizations should direct their energies, each in its appropriate sphere. We have no need of any more machinery for this purpose, or any new agencies to do this work. It is only necessary, that we put what we have at work in the right way, remedy any defects that may be revealed in its working, and keep it in thorough repair, and apply the motive power sufficient to work it with requisite force and speed.

With such an object in view, it will readily be seen, that very material modifications must be made in the working of our several organizations, particularly our Agricultural Societies. It will greatly change, if not entirely revolutionize the premium lists, so as to secure, if possible, increased knowledge, in relation to every department of industry, instead of operating to stimulate production, without any other reference, as is now too much the case. They will aim to draw out information how the most effectually and successfully to enhance *profitable* production; and this is what farmers most need to know, in the view of your committee, and what our agricultural organizations should aim to obtain and place within their reach. This they have a right to demand of them, as the children of the State.

DARIUS FORBES, *Chairman.*

REPORT ON TOPIC NO. 5.

The committee to whom was referred topic No. 5, "To inquire whether it be advisable to recommend any legislative provision to enable the farmers of the State more easily and at low rates of interest, to obtain capital to invest in their business," have had the subject under consideration, and submit the following brief report:

That notwithstanding low rates of interest might in some instances be advantageous to those engaged in agricultural pursuits, and some individuals have thought that a free banking system, if incorporated by the State, would be beneficial to the community, and although this subject may be agitated by those who think favorably of it, still your committee are unanimous in the opinion that it is not expedient nor advisable for this Board (there being many other things needed of more importance) to recommend any legislation on the subject at this session.

D. A. FAIRBANKS, *Chairman.*

REPORT ON TOPIC NO. 6.

The committee to whom was referred the subject of inquiring into the expediency of the Board recommending the time on which the several Agricultural Societies should hold their annual fairs, have had the same under consideration, and report:

That we find that many of our county shows have been held upon the same day, and that this was quite generally the case with those which were adjoining each other, or their location and easy access was such, that if they had been held at different times, many of the farmers of one society might have attended the fair of the other, and thereby have received the benefit of two or more of these exhibitions instead of one.

We deem it important that our county exhibitions should be so arranged, that the fair of one will not conflict with those in the immediate vicinity, or those where there are the best facilities for visiting each other for the purpose of examining and comparing the different improvements made through the encouragement of the several societies. Our local societies seem to be aware of the advantage that might be derived from holding their fairs upon different days, for we understand that many of them are now endeavoring to make arrangements to avoid this evil, and the committee would recommend that the Board take no further action upon the subject than to recommend to the several societies, that whenever it is practicable, they avoid holding their exhibition in adjoining societies upon the same day.

ISAAC W. BRITTON, *Chairman.*

REPORT ON TOPIC NO. 7.

The committee appointed "to inquire whether it would be expedient for this Board to recommend to the Legislature the appointment of a special commission, to inquire into the cause or causes which hinder the more rapid settlement of the State lands, and report to the next Legislature," report, that this Board recommend to the Legislature to make the appointment as above specified.

HENRY LITTLE, *Chairman.*

REPORT ON TOPIC NO. 8.

The committee charged with the consideration of the bill at the close of the Appendix to the Secretary's Report, beg leave to submit the following:

That, while the plan proposed, of endowing an Agricultural Professorship in each of our Colleges, possesses undoubted merits, and would greatly aid in laying broad and deep the foundations for future advancement, we yet believe, from an examination of the subject, and conference with gentlemen connected with our Colleges, that in the form proposed, it is open to practical objections of a serious nature.

Your committee further report that they deem the Normal school a more urgent necessity of the State at this time, than the educational movement proposed in the bill; and they believe that in connection with a Normal school, whenever put in operation, there can be established (and at much less expense to the State,) a Professorship of Agricultural Chemistry, which will answer our aim equally well, together with the farther advantage of training our teachers to impart instruction in this department, in the common schools. We therefore recommend no further action of this Board in regard to the bill, than the submission of the views of the Board to the appropriate committees of the Legislature.

S. L. GOODALE,
CHARLES J. GILMAN,
DARIUS FORBES,
ALDEN JACKSON,
NATHAN PATTANGALL,
} *Committee.*

REPORT ON TOPIC NO. 9.

The committee to whom was referred the inquiry whether it be advisable to recommend legislative action to encourage the underdraining of lands in this State, beg leave to report as follows:

That while they are convinced, by observation and experience, that underdraining, judiciously practiced, (upon lands which suffer from a surplus of water on *or beneath* the surface, and so need to be relieved of the presence of an element, indispensable and invaluable in itself, yet noxious from position and excess,) would result in a higher degree of fertility and of profit, than can be obtained without it, they yet see no reason why legislative action should be invoked in favor of one mode of improvement rather than of another, or indeed of any; they believe that such action would be more legitimately employed in diffusing knowledge throughout the community upon this and other feasible modes of improvement, trusting alone to the pecuniary interest and good sense of the farmers to adopt such improvements into their practice, when fully enlightened upon the subject and convinced of their utility.

S. L. GOODALE, *Chairman.*

REPORT ON TOPIC No. 10.

The committee to whom was assigned the duty "to inquire whether any legislation is necessary to secure more complete and perfect agricultural statistics of the State," have attended to that duty, and report for your consideration:

An act additional to chapter —— of the codified laws of the State, relative to the duties of the assessors of cities, towns and plantations.

SECT. 1. The assessors of each city, town and plantation in this State, are hereby required to collect and transmit to the Secretary of the Board of Agriculture, on or before the first day of July in each year, such statistical information as may be required by said Board, relative to the industrial pursuits of their several precincts, as they may be annually presented on the first day of April.

SECT. 2. If the assessors of any city, town or plantation, shall willfully neglect to make the returns aforesaid, in the manner aforesaid, such assessors shall forfeit to the State a sum not exceeding fifty dollars, to be recovered on complaint by the Secretary of the Board of Agriculture.

And also, An Act additional to chapter —— of the codified laws of the State, relative to the duties of the Board of Agriculture:

SECT. 1. The Secretary of the Board of Agriculture shall cause to be printed blank tables, conveniently arranged, for the returns of such facts relative to the industrial pursuits of this State, as may be deemed necessary by said Board, to present a clear and statistical view of the industry of the State, and shall furnish three copies of the same, together with a copy of the directions prescribed by the Board of Agriculture, to the assessors of each city, town and plantation, on or before the first day of April in each year.

SECT. 2. The Secretary of the Board of Agriculture, after he shall have received the returns aforesaid, from the assessors of the several cities, towns and plantations, shall cause to be prepared and printed, under his direction, a true abstract of the same, for the use of the Legislature, at the next session thereof.

CALVIN CHAMBERLAIN, *Chairman.*

REPORT ON TOPIC NO. 12.

The committee to whom was referred the expediency of recommending legislative action to encourage the formation and support of farmer's clubs, report:

That they deem it expedient that some farther instrumentality should be put in operation at once, for the diffusion of agricultural knowledge throughout the community. Your committee would by no means undervalue the science of Agricultural Chemistry, nor the advantages arising from a collegiate course of instruction in scientific agriculture, wherever it may be practicable; but from the nature of the case, it is apparent at a glance, that only a *very small* proportion of our young farmers *can* ever be able to avail themselves of such a course, and that if we would have them obtain a knowledge of their profession, the means must, in some way, be placed within their reach.

Your committee believe that farmer's clubs, properly managed, would prove an economical and efficient instrumentality towards this end. That each club might become a focus toward which could be gathered, and from which might radiate, the results of the combined experience of all. The failure of one, with its causes, is made known, so that a repetition may be avoided; the success of another, with its conditions, comes to be so fully investigated and understood, that all may copy the practice and obtain similar results.

By means of a moderate contribution, each club might furnish itself with a greater or less number of the best books and periodicals devoted to agriculture, and which the unaided means of any might not be able to purchase. These, circulated among its members, would suggest abundant material for thought, conversation, and discussion, at its regular meetings, and prove an unfailing source of interest and improvement. At these meetings, also, the varied modes of treating, feeding, and rearing cattle; the comparative value of different breeds; methods of husbandry, and of tillage; the use and application of fertilizers; and various matters of household economy, dairy processes, &c., &c., might be so investigated and discussed as to awaken inquiry, quicken thought, and stimulate improvement. Connected with the club, might be organized classes for mutual instruction, by the study of some suitable text book, as, for instance, Nash's "Progressive Farmer," Stockhardt's "Chemical Field Lectures," or some other good work.

Should the means of the club warrant the undertaking, they might secure occasional lectures, or even a full course, from some competent person, on subjects connected with agriculture. Adjoining clubs might unite for this purpose, and thus materially lessen the expense.

The success and popularity of the Lyceum system in New England for the past ten or fifteen years, show how this might be made to operate where young and old of both sexes become actively and warmly engaged in it.

In view of these and similar considerations, which might be adduced to great extent if it were deemed necessary, we recommend the enactment of a law granting a moderate bounty (say $50) to each such club which may be formed, (to the number of——,) whenever the treasurer of such association presents to the State treasurer a certificate under oath, that the said club has *actually raised and expended* a similar sum in the purchase of books and periodicals, or other legitimate purpose of said club.

S. L. GOODALE, *Chairman.*

Voted, That the Secretary be directed to prepare a report of the doings of the Board at the present session, for publication with his abstract or digest of returns from the Agricultural Societies for the past year.

On the 30th of January, 1857, the Board adjourned without day.

INDEX

TO ABSTRACT OF RETURNS FROM AGRICULTURAL SOCIETIES.

PAGE.
Address by Dr. Buxton, 115
Address by Dr. True, 88
Address by Rev. H. C. Leonard, 189
Agricultural Chemistry, 126
Agricultural Education, 57, 125, 285, 287
Agricultural Implements, 64, 211, 222, 231
Androscoggin Society, 204
Apples, Reports on, 10, 112, 139, 231, 259, 264
Ayrshires, 177
Barley, Statements on, 113, 163, 234, 235
Beans, 153, 154, 226, 249, 252, 257
Board of Agriculture, Transactions of, 267
Board of Agriculture, Act to amend the act establishing, 273
Butter, Statements on, 86, 111, 145, 156, 185, 223, 246
Butter, Reports on, 65, 162, 213, 230, 240
Carrots, Statements on, 44, 145, 148, 164, 219, 236
Cheese, Reports and statements, 85, 112, 144, 156, 186, 213, 220, 224, 230, 240, 46
Clover Seed, 250
Compost Manure, Statements on, 154, 165, 214
Corn Fodder, 73
Cranberries, 36
Cumberland Society, 76
Devon Cattle, 28, 79, 80, 158, 239
Drawing Matches, 9, 278
Durham or Short Horn Cattle, 25, 81, 152, 158, 160, 176, 178, 244, 245
Durham, Grade, 27, 80, 111, 141, 156, 160, 176, 184, 216 224, 239, 255
East Somerset Society, 144
Farmers' Clubs, 287
Flowers, 259
Fruit, Culture of, 14, 261
Franklin County Society, 139
Grapes, Report on, 15, 260
Golden Ridge Plantation, Description of, 237
Hereford Cattle, 30, 80, 137, 160, 244
Honey, 33, 72, 156, 227
Horses, Reports on, 10, 24, 63, 70, 77, 79, 137, 144, 158, 178, 184, 215,
224, 231, 239, 242, 245, 255, 268
Horses, Trotting of, at Shows, 275
Indian Corn, Statements on, 38, 41, 72, 82, 105, 113, 136, 138, 141, 142, 159
171, 175, 218
Intellectual Wants of Farmers, 51

INDEX.

PAGE.
Jersey Cattle, 29, 177
Kennebec Society, 160
Lincoln Society, 110
Maine Pomological Society, 259
Maine State Agricultural Society, 5
Manufactures, 78, 213, 227
Milch Cows, 30, 64, 68, 70, 96, 177, 216, 224, 243
Mixed Crops, 75, 250, 254
North Aroostook Society, 241
North Kennebec Society, 183
North Franklin Society, 141
North Somerset Society, 158
Oats, Statements on, 42, 108, 146, 147, 148, 175, 217, 249
Onions, 145, 148, 229, 238
Oxford Society, 77
Pastures, 94
Penobscot and Aroostook Union Society, 237
Piscataquis Society, 230
Pears, 12, 112, 259
Plums, 14, 15, 112
Plowing Match, 6, 103, 210, 255
Poem by C. F. Dunn, 180
Potatoes, 142, 159, 171, 175, 218, 235, 251
Poultry, Reports on, 31, 32, 71
Proceedings of the Maine State Agricultural Society, 45
Rice Corn, 43
Ruta Bagas, Statements on, 143, 145, 165, 167, 219, 256, 257
Rye, 43, 146, 188
Sagadahoc Agricultural Society, 221
Sheep, 30, 82, 152, 158, 161, 178, 245
Soils, 89
South Kennebec Society, 166
Swine, Reports on, 31, 70, 82, 161, 178, 207, 243, 245
Statistics, Report on, 286
Town Teams, 204
Trial of Working Oxen, 279
Vinery Culture of Grapes, 16
Washington Society, 255
West Oxford Society, 103
West Penobscot Society, 232
West Somerset Society, 152
Wheat, Statements on, 37, 104, 149, 159, 175, 176, 187, 217, 233, 248, 251
York County Society, 62

New York Botanical Garden Library
3 5185 00258 4736